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Andrew Balfour

Medicina Nautica:

AN

ESSAY

ON

THE DISEASES OF SEAMEN.

IN THREE VOLUMES.

VOL. III.

By THOMAS TROTTER, M. D.

MEMBER OF THE ROYAL MEDICAL SOCIETY,
AN HONORARY MEMBER OF THE ROYAL PHYSICAL
AND OTHER LITERARY SOCIETIES OF EDINBURGH;
LATE PHYSICIAN TO HIS MAJESTY'S FLEET
UNDER THE COMMAND OF ADMIRAL EARL HOWE, K. G.
AND TO THE SQUADRONS COMMANDED BY ADMIRAL LORD BRIDPORT, K. B.
ADMIRAL EARL ST. VINCENT, K. B.
AND THE HON. ADMIRAL CORNWALLIS.

REQUIES EA CERTA LABORUM.

ÆNEID.

SECOND EDITION.

LONDON:
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1804.

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TO

Sir ROGER CURTIS, Bart.

VICE ADMIRAL OF THE RED,

AND

COMMANDER IN CHIEF AT THE CAPE OF GOOD HOPE, &c.

SIR,

THE firſt fruits of my profeſſional ſtudies directed to a naval ſubject, were inſcribed with the name of Admiral Earl Howe: the laſt of them now ſolicit your protection. *Te nunc habet iſta ſecundum.*

In appealing to your judgement on the preſent occaſion, I am only led to imitate that line of conduct which induced me to publiſh the Firſt Volume of MEDICINA NAUTICA. You were pleaſed to expreſs your approbation of that Work, and an opinion that it could not fail to be uſeful to his

Majeſty's naval ſervice. Like the former, the preſent Volume was compiled on the ſpot of duty; it muſt therefore partake of the imperfections of its predeceſſors. But if the ſubject of health, and medical eſtabliſhments, are to be rendered complete by experience and obſervation, theſe pages have a chance of being conſulted, when it will be of little importance how and where the author wrote. Theſe labours were begun under your own and the auſpices of the late Earl Howe; and I truſt you will perceive that I have preſerved here the ſame devotion to the duties of my profeſſion, which procured your countenance and aſſiſtance.

The brave man who expoſes his life in the ſervice of his country, has claims on the generoſity of the Public beyond every other competitor. Beſides the dangers of battle, he has to contend with hardſhips and privations of all deſcriptions; and his diſeaſes are of that claſs the moſt fatal in their iſſue. If therefore the language of truth and independence becomes any official ſituation, it belongs to the Phyſician of a fleet or army. Of all conditions in human life, next to infancy, the ſick-bed is the moſt helpleſs. The fineſt examples of virtue have been practiſed

there, as being the fitteſt field for the exerciſe of the moſt diſintereſted benevolence. To the medical profeſſion, as connected with public ſervice, this office is almoſt excluſively confined. While this evinces the neceſſity of correct and punctual attendance, it alſo ſhows how minute and perfect all arrangements connected with it ought to be. But it appears in this Work, even in a political view, that the ſubject loſes nothing of its importance. And if confidence is to be beſtowed on the officers of health, their repreſentations ought to meet with nice attention and redreſs. I have thus been zealous to record many of my applications for correcting abuſes; for it may be a long time before any ſucceeding Phyſician of a fleet can have the experience which has fallen to my ſhare; and if they are not inſerted here, the hint for improvement may be loſt. God forbid! that I ſhould carry to the grave a ſingle idea that could benefit the naval ſervice of the country.—From that ſervice I am now to retire, where I have ſpent all the beſt of my days, and to which my ſtudies have been faithfully devoted. It muſt now think of me as a man who can have no ſhare in its future operations, but who will be proud of its remembrance, as long as he lives.

Accept,

Accept, Sir, my ſincere and grateful thanks for the numerous inſtances of perſonal attention and public confidence with which you have honoured me; as they have been an ornament to my paſt, ſo they will be the conſolation of my future days. *Vale.*

Semper honos, nomenque tuum, laudeſque manebunt.

T. TROTTER.

Plymouth Dock,
April 14, 1802.

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DIRECTION TO THE BINDER.

The Plate of the Jennerian Medal to face page 121.

INTRODUCTION.

AT length this bloody conteſt hath drawn to a concluſion; and peace, wiſhed for by every good man, is again reſtored to theſe devoted lands. A period ſo productive of great events will not fail to employ the pen of the ableſt hiſtorians, and excite them to develope, for the information of ſucceeding generations, thoſe mighty cauſes, motives, and paſſions, which have agitated and convulſed the ſocial compact, and given birth to new forms of government throughout a large portion of Europe. If we are to judge from the manner of paſt hiſtorical writers, we may expect that thoſe of the preſent times will not turn from the uſual courſe of narrative, to draw the ghaſtly picture of ſickly fleets or diſeaſed armies, or to detail the frightful and horrible carnage of human beings, on the deck of a ſhip, or on the field of battle, who have bled in this long and ſanguinary conflict. Theſe authors have hitherto contented themſelves with giving in the groſs the *deathful bill of fare*; and only ſelect ſuch points for diſcuſſion, as ſerve to unfold the policy of a ſtateſman, or the military talents of a general. Sometimes indeed we are told, that an army was forced to retreat from an enemy's country from ſickneſs, as we hear of fleets being diſperſed, and forced from their ſtation by ſevere gales of wind. But the ſlip-ſhod hiſtorian does not venture to expoſe himſelf to the

peſtilential effluvium of a ſick-berth, or hoſpital ward; nor will he deign to count the numbers immured in the unventilated priſon of an impreſs tender. When he offers animadverſions on public councils and political meaſures, his topics of reprobation are profuſe expenditure of money, exorbitant taxes, and poſts beſtowed on undeſerving favourites. But he does not arraign the parſimony of treaſure in preſerving health, or the ſpare application of it in comforting the bed of ſickneſs. If he condemns the traitor for ſedition, or the ſoldier for cowardice, is no moral turpitude to be imputed to the public medical attendant that deſerts the bed of a brave man, for the fee of a richer patient? Is ſo large a part of the miſeries of war to be forgot in the records of nations?

It is thus that the page of hiſtory caſts a falſe glare over the greateſt of human evils; and the young mind from thence is early taught to admire, what have been viciouſly ſtyled the "heroic virtues." The flaſh of a red coat, a buſh of plumes on the hat or helmet, and the alluring muſic of a regimental band, bring to his recollection what he had imbibed from the leſſon of hiſtory, till his whole imagination is on fire,

"To cry havock, and let ſlip the dogs of war."

Sentiments like theſe, ſo prematurely inculcated into the boy, have afterwards a powerful effect in forming the actions of the man; for he will not liſten to the groans that make the firſt part of a triumphal chorus, and will turn from the ſtarving myriads of widows and orphans that form the rear of the cavalcade. It is this ſpirit that effects a rupture between nations.

Amidſt thoſe ſcenes of war, deſolation, diſeaſe, and death, it becomes the taſk of the medical philoſopher

philoſopher and hiſtorian to collect ſuch occurrences as point out the beſt means of enlarging the ſphere of prevention, and by ſelecting the moſt prominent and ſtriking facts, to eſtabliſh rules that may direct future travellers and enquirers in the ſame path. Such has been the avowed intention of this work; in the execution of which we have freely thought for ourſelves on every ſubject under review, where we wiſh our labours to be meaſured only by the ſpirit of utility which we inculcate. This being the caſe, the faſtidious reader, if he wiſhes to follow us, muſt lay aſide all technical formalities, and that ſpecies of grimace that ſtaggers to unmaſk official iniquity. Having thus regenerated himſelf, and no longer the ſlave of prejudice, he will be able to diſcern modern improvements from ancient errors, and will be convinced, that the practice of medicine may really confer a great deal of benefit on mankind, without preſcribing a ſingle doſe of phyſic. I will then conduct him through the horrors of the impreſs ſervice; the orlop-priſon of the Liverpool guardſhip, and the preſs-room of a Briſtol tender; through the Royal William and Cambridge receiving ſhips, that have ſo often ſent abroad the vapours of contagion. I ſhall then lead him through the ſpacious, clean, dry, and airy decks of a ſhip of the line; where diſeaſe is prevented by the perfect obedience of every precept that commands health, where diſorder is ſubdued by maſterly diſcipline, and where the frown of an intelligent and accompliſhed officer can do more in the correction of crimes and immoralities, than a cat-o'-nine-tails. He ſhall afterwards view the pride of Nautical Medicine, the *Markham Sick-Berth*; where a diet is provided, delicate, reſtorative, abundant, at the ſeaman's

own expence, that far exceeds the ſlow-paced improvements of an hoſpital ward. He will remark, in our walks through hoſpitals, that we have not heſitated to examine corners of darkneſs where the eye of obſervation never peeped before: the kitchen, the pantry, the pent-up bed-houſe, the clothes of infection unventilated and unwaſhed, have all been dragged into day, with a thouſand other imperfections that marked thoſe neglected inſtitutions. But our ſcrutiny and corrections have not been limited to ſhips and hoſpitals. He will obſerve, that we have even claimed protection for the heedleſs ſeaman, in the hours of his recreation and pleaſure on ſhore, againſt the ſink of vice and drunkenneſs, to which he was expoſed by a wicked police; and two hundred gin-ſhops have been ſhut in Plymouth Dock, that have called down the execration of every thinking being on a magiſtracy, that dared to profane the functions of its office, in the very moment when ſedition was lying in wait to corrupt the defenders of the country.

If in making theſe digreſſions from the uſual track of profeſſional inquiry, that others have either not obſerved, or diſdained to explore, much human affliction has been prevented or relieved: the head of the brave ſeaman laid on a ſofter pillow, or a new path to improvement opened, a candid reader will overlook a caſual ruffled feeling or angry expreſſion, during a ſtruggle with all the powers and prepoſſeſſions which ſtupidity, obſtinacy, and malevolence have oppoſed againſt us*. At the ſame time, let the reader ſeparate the

* It is curious to obſerve the hoſtility which has been offered, from different quarters, to my meaſures of ſafety in the fleet. A Lady

the act of the executive officer of health in a fleet from that of the private phyſician, and diſtinguiſh between the duty of a public cenſor, that ought to wink at no abuſes, and the forbearance that may be expected from an individual. My future retirement will then be ſecure from perſecution and miſapprehenſion; while my declining years ſhall be ſolaced with the thought, and look back with pleaſure on the laborious but virtuous taſk, of having contributed to the comfort and happineſs of thouſands.

In a work like Medicina Nautica, ſo nearly connected with the intereſts of the Britiſh Navy, gleaned amidſt its laurels and protected by its banners, it is impoſſible to paſs over in ſilence ſuch a group of glorious atchievments as ſhine forth in the naval tranſactions of the preſent war. Whether we view the general actions between fleets, or thoſe between ſingle ſhips, as well as the numerous inſtances of the enemy's veſſels being carried by boarding, we meet every where ſubjects for admiration in the diſplay of conſummate ſkill, ſuperior ſeamanſhip, and active courage. The five general victories are each diſtinguiſhed by peculiar traits of talent

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A Lady of rank, who was in the cuſtom of giving large dinners to ſmall parties, when the ſcurvy, in 1795, had put in contribution all the lemons and oranges of the country, complained that none could be procured for *her company*. "It is a "ſhame," ſaid her Ladyſhip, "that the nation's money "ſhould be expended in this way: Captain P. tells me that "theſe things are not good for ſailors; and, what is worſe, "this phyſician can perſuade Lord Howe to any thing."— Ladies of another deſcription, namely the *green* women in Portſmouth market, combined *not* to ſell a cabbage, or any thing, to the phyſician's ſervant. "Your maſter," ſaid they, "has ſpoiled our trade by ſending all the *ſallad* to Spithead."— When the gin-ſhops were ſhut in Plymouth Dock, it was propheſied that I ſhould be "*found murdered in the ſtreets.*"

and heroiſm. The firſt of June, under Earl Howe, was ſignalized by the *novelty of attack* and *hard fighting* *. The fourteenth of February, under Earl St. Vincent, for *promptitude and intrepidity* in aſſailing an opponent nearly double in force; but at the ſame time *caution* and *penetration*, by what is called *knowing your enemy*. Lord Duncan's battle was characterized by *hardihood* and *ſkill* in *cloſing* with the Dutch in blowing weather on a lee ſhore. The battle of the Nile was glorious and unrivalled by attacking the enemy *at anchor*, and *deceiving* him by engaging on the in-ſide: The victory off Copenhagen ſeemed to unite the *ſeamanſhip*, *valour*, and *deciſion* of all the

* A petty work on Naval Tactics has had the impudence to claim the merit of this battle;—a claim that every officer preſent has denied. The ſpirit of the general ſignal "*for "paſſing through the enemy's line, and engaging to leeward,*" has no precedent in the records of ſea-fighting. It exiſted only in the capacious mind of the immortal hero that directed it. The French had formed no idea that the Britiſh Admiral would ever hazard the advantage of a windward ſituation. But what Lord Howe expected from this ſignal was, firſt, to take the enemy by ſurpriſe, which he knew would effectually throw them into confuſion; when ſuperiority in ſeamanſhip, and in the uſe of the great guns, would ſoon decide in his favour. A ſyſtem of naval tactics is a ſoleciſm in language. When a fleet is once engaged, every ſhip muſt then annoy the enemy her own way, or ſuccour a friend when ſeen neceſſary. The French Admiral vainly thought that the Queen Charlotte would take her ſtation at due length to windward of him. Nay, the quarter-maſter at the Charlotte's helm cried out there was not room to paſs between the French Admiral and his ſecond: "Steady" replied Captain Bowen, who was maſter. The captains of the guns at their quarters called out, "*Bravo! we are not to fire till we can ſee the whites of "their eyes.*" When ſuch iron nerves as theſe, in a future war, and under the preſent internal economy of our ſhips, ſhall again conduct a Britiſh fleet into action, it requires but little of the ſpirit of prophecy to foreſee the iſſue; and there will be little appeal to Mr. Eldon's *dry-land* tactics.

preceding

preceding battles: human efforts can go no farther. To these victories of the British navy Europe owes her independence, while her armies have either been annihilated, or forced into hiding-places. If the ambition of the present French government, like some of the former governments of that country, aims at universal empire, the first step towards that must be the destruction of the naval force of Great Britain. To those persons who are partial to the military fashions of the day, this may perhaps appear but a matter of secondary consideration, and they will look to a British army. "The French army," say they, "we now know is not invincible; we have beat "them in Egypt, and they dare not attack us at "home." I have as high an opinion of the soldiers of this country as any man alive: with the assistance of detachments of naval officers and seamen, who helped them over the lakes and canals, they did most gallantly drive the French out of Egypt. But in the event of a future war between the two countries, (which, under auspicious Providence, I hope is at a very great distance,) it is to be expected that we may be assailed in a quarter much more vulnerable than our own shores. If we can suppose for a moment that our fleets are beat from the face of the deep, and the Republican navy triumphant, does it follow that a French army would immediately land in England? No. The genius of Bonaparte is crafty, inventful, and full of projects. He will amuse and keep on the rack our national credulity with sham embarkations of troops, flat-bottoms, and gun-boats; but his enterprize will be directed somewhere else. If I may be allowed to borrow an allusion from physiology, he will first paralyse

the extremities, to cut off the vital current from the heart. He will overpower with his numerous battalions your Weſt India iſlands, your Indian poſſeſſions; and thus, by depriving you of colonial wealth, he will leave you to court your falling funds and ruined finances. Will a huge army, as brave as it could be wiſhed, be able to conſole the wounded ſpirits of Engliſhmen under ſuch a reverſe of fortune? You may then drag your field-pieces to the beach, and line your coaſts with riflemen; they may prevent the predatory excurſions of a privateer's crew, but they will exhibit a poor ſubſtitute for a naval defence. The firſt defeat of a navy to this country muſt be the firſt ſtep to its ruin. Bonaparte knows how to improve victory; and he would follow up the victory over a fleet by ſeizing your colonies, not by invading England: for he muſt be aware, although a ſoldier by profeſſion, that the ſpring and energy of a naval power depend on commerce, as being the nurſery of ſeamen.

The very voice of Nature, on account of our inſular ſituation, calls upon this country, "TRUST "YOUR WOODEN WALLS," as the reſponſes of the oracle did the Athenians of old. If that voice is to be obeyed, the ſpirit of naval enterprize muſt be cheriſhed and preſerved; and the preſent moment unfolds the neceſſity of infuſing into it new vigour, ſuch as did not plead in its favour at the concluſion of any former war: *Proviſion muſt be made for the officers of the navy on half-pay.* Let not men, educated in high notions of profeſſional dignity, from the applauſe that has followed all naval operations during the late war, be conſigned to obſcurity by the peace for which they have bled. This navy is not to be preſerved againſt the decay of age, or the aſſaults of time and enemies,

enemies, by mere docking, or eſtabliſhments for encouraging naval architecture. The French have always excelled us in building what are called fine models; and, I believe, without fear of being contradicted, that they will continue to excel us. But it will be our own blame, if we allow even this excellence to paſs to our diſadvantage. The ſuperiority in ſeamanſhip, and in the uſe of the great guns, ſecure to us all the advantages of their inventions and improvements.

The practical and manual duties of ſeamanſhip are not difficult to learn: navigation and aſtronomy, branches of ſcience neceſſary to the nautical art, may even be obtained on ſhore. But ſomething eſſential will be ſtill wanting to perfect the naval officer; theſe are the habits which are peculiar to the ſea-life, which can be acquired by early education only. Our young officers generally enter into the navy about eleven, twelve, or thirteen years of age; I think it ought not to be later. The mind at this period is pliant, and eaſily formed to new cuſtoms; promptly imitates whatever is held up by way of example, and aſſociates with facility to the manners and actions of others. It is thus that the nautical character is completed, and taught to view with indifference thoſe dangers, difficulties, and privations peculiar to the profeſſion. We ſee, during a war, numbers of men who come into the navy, that in order to be uſeful are ſtationed in thoſe parts of the ſhip where they may beſt learn the duty of a ſeaman: many of theſe certainly acquire much uſeful knowledge; but they are not the men that the diſcerning officer will truſt on trying occaſions. They are always to be diſcovered by their walk and geſture; and if they attempt to narrate any manœuvre in ſeamanſhip,

manſhip, their language at once betrays the want of an early education. An illuſtrious foreigner was viewing Portſmouth dock-yard ſome years ago; and when the Naval Academy was pointed out to him, he expreſſed a ſtrong curioſity to ſee thoſe young cadets, that were deſtined to wield the naval thunder of Great Britain againſt her enemies. But how much was his ſurpriſe when he only beheld three-and-twenty boys, inſtead of five hundred, which he expected. An officer who was preſent relieved him from his embarraſſment by pointing to Spithead, where a large fleet then lay at anchor: "*Yes*," ſaid the foreigner, "*there you educate your boys; and thus, when they* "*grow to men, they make the ſea their element.*" The proportion of officers, now on the liſt, who have been educated at the Portſmouth Academy, to the others, are about one to a hundred. It were therefore much to be wiſhed, that more attention ſhould be paid to other branches of education in ſhips, which might be effected with no great difficulty, and at very moderate expence.

If there is any truth in what I have ſaid, that a naval and nautical education can only be acquired by early habits and aſſociations with a ſea-life, it is plain, that a ſeries of years is required to form a navy even in this country. Trading veſſels may be a ſufficient nurſery for common ſeamen, but his Majeſty's ſhips can alone ſerve for the education of officers. A conſtant ſucceſſion of young gentlemen muſt be riſing to keep the number entire for any emergent ſervice. When this mode of training naval officers ſhall be neglected, and their pay in dear times becomes not equal to their ſupport, they muſt retire to obſcurity with broken hearts. They are at leaſt entitled to the half-pay of the army officers with whom

whom they rank; and till this odious diſtinction is aboliſhed, the juſtice of their claims on the country that they defend cannot be ſatisfied.

When Sir William Elford, in the laſt ſeſſion of parliament, mentioned ſome propoſition of half-pay for the militia ſurgeons, the Houſe of Commons moſt readily felt for that valuable body of officers. Sir William is himſelf a militia officer, and deſerves the thanks of his country for remembering the caſe of ſo many neglected individuals. But how comes it that no perſon in that aſſembly can be found to do as much for the navy ſurgeons? Becauſe there are twenty army officers in Parliament for one of the navy, is it acting with the feelings of Engliſhmen to leave the medical claſs of the navy to ſhift for themſelves *? Surely the period muſt be near when ſome member will take upon him the defence of

* It has commonly been remarked, that the heads of our rich families flock to the army, while the junior branches betake themſelves to the navy; but it is perhaps not generally obſerved, that the naval liſt at this time only contains the names of three officers who were heirs to a peerage at the time they entered on board. Theſe are, Lord Garlies, Lord Proby, and Lord Cochrane. The firſt diſtinguiſhed himſelf at Martinique, by laying his ſhip cloſe to the fort, *in the good "old way,"* as expreſſed by Lord St. Vincent; and the laſt led his crew of fifty men, from the Speedy, on board of a Spaniard with eight times the number, and took her.

Nevertheleſs, I believe the good people of old England have no objections to ſee their ſhips commanded by poor men; it ſaves at leaſt the appointment of *acting captains*. Our fleets have therefore made their parade the enemy's coaſt; which, under other circumſtances, might have loitered in our own harbours, and the navy been mortified with the *monotonous* complimentary ſpeeches of ſome reviewing general. The elder ſons have thus had ſome amuſement in firing *feux-de-joye* on the naval ſucceſſes of their younger brothers.

a cauſe,

a cauſe, for which every generous reaſon pleads; and convince that aſſembly, that it is twined with the exiſtence of our navy.

But farther; the military events of the late war, the defeats and diſaſters which have followed our army almoſt every where, hold up ſuch a picture of adverſe circumſtances as have ſeldom been equalled in the annals of any people. It is not that want of ſucceſs only has been the fate of military operations, but the diſeaſes and mortality that followed are horrible to think of. It may again be repeated, that our military character is confirmed by the ſucceſsful campaign in Egypt. But even admitting this in its fulleſt effect, that campaign would have been much eaſier prevented three years before, had Lord St. Vincent been ſupplied with ten ſail of the line a few months ſooner, to have blockaded Toulon, at the time the Ægyptian armament was preparing. Now that theſe horrors are paſt, it is devoutly to be wiſhed, that ſome diſpaſſionate hiſtorian may be found, who, diveſted of all party prejudices, ſhall write only for the benefit of his country, and in an independent manner hold up ſuch leſſons of misfortune, as may warn poſterity againſt ſquandering the reſources of theſe kingdoms on military expeditions.——The only apology which I can offer for entering into a diſquiſition of this kind, that to ſome may appear foreign to my ſubject, is the ſincere attachment I profeſs for the Sovereign on the throne, and his ſucceſſors; the veneration I feel for the Britiſh Conſtitution; and the regard I muſt ever expreſs for the naval ſervice, as the only bulwark of the Britiſh Iſles.

The preſent Volume, I truſt, will be found to be not inferior to either of the former. The diſmiſſal of the hoſpital ſhip cut off much of my communication with the fleet; and in ſome parts I appear rather the hiſtorian of the afflictions of the ſick, than their phyſician. Lord Bridport ordered all the ſtores of that ſhip, which had been the pride of our ſervice to complete, to be landed without ever conſulting me, whether any thing ought to be reſerved, leſt the fleet came to action, or for other eventual malady. The conſequence has been, that the number of deaths at ſea has been very great beyond the preceding ſeaſons, and the ſick deprived of all the comforts which the Admiralty, under Earl Spencer, had ſo bountifully granted. Freſh meat and vegetables, it is true, were liberally ſupplied in 1801, off Uſhant; but theſe are only a few out of many delicacies with which our hoſpital was ſtowed. My ſentiments on theſe ſubjects are not faſhioned to the opinions of any ſet of men; but, what I conceive to be better, they are the language of Britiſh benevolence, and the practice of a phyſician who, amidſt all his foibles, has not been known to diſcover the ſpirit of temporizing. Studies ſimilar to theſe procured me the appointment which I have the honour to hold; they have ſupported me through much bodily fatigue and mental exertion; and they ſhall attend me through this laſt of my labours, in the naval ſervice of my country. Many improvements of acknowledged utility have originated with me, and many have been ſuggeſted that others will have to accompliſh. In this, as in my former Volumes, many official repreſentations are introduced for the information of our ſucceſſors. In the event of a long peace, they might otherwiſe be loſt to the public. The navy

at this moment abounds with young men of the medical profeſſion, who are earneſtly attached to its ſtudies, and ardent after improvement. Theſe gentlemen, at ſome future day, will occupy the poſts of honour in the department; but the ſame prejudices that have operated againſt me as a beginner of correction, are not likely to be oppoſed to them in the ſame degree. And in this manner will be attained, in fifty years, that perfection of medical duty and arrangements, which, I think, might be brought about in as many days. Had I poſſeſſed the power, as I do the inclination, this taſk ſhould not have been left to others.

Medical readers will be aſtoniſhed to ſee, at this period of a triumphant navy, ſo many abuſes left to prey upon health, and that ſo little deſire after improvement ſhould be diſcovered. But it is with the health of the public as it is with the individual, the value of it is not thought of till it is loſt. I have therefore inſerted the copy of a *Letter*, to the preſent Firſt Lord of the Admiralty, "*on meliorating the encouragement to medical officers.*" It exhibits in a conciſe view a radical method of reform; and, I hope, will be found equally conſiſtent with the benefit of ſervice and that of the ſurgeon. It is at leaſt proper that long experience on this ſubject, as well as others, ſhould be recorded, till a diſpoſition ſhall be manifeſted to reduce it to practice.

Such *occurrences* relating to health as are any how intereſting are detailed, as in the former Volumes. Some things, it may be remarked, might have been better omitted: "*but my pen guides me, I guide not it.*"

The ſubjects of *Contagion and Typhus* are comprized under one article; which enables me to offer frequent practical remarks, as ſuggeſted by matter

matter communicated by the ſurgeons. Theſe will be found rather to enliven the narrative than to interrupt it. This head affords many ſhocking examples of the horrors of the impreſs ſervice: would that I poſſeſſed eloquence ſufficient to convince ſtateſmen of its iniquity; for the facts are palpable! If it is wanted to ſubdue effectually that ſpirit of inſubordination and revolt, which has ſo repeatedly appeared this war, it muſt be by finding *another method* for manning the navy. Make the ſervice of your ſeamen voluntary, and tumult will be at an end.

Some *Thoughts on preventing the Plague* follow next. They were written three years ago, when that diſeaſe was much the ſubject of converſation in this country.

A diſtinct article is now allotted to the *Ventilation of Ships*. This, I hope, will be uſeful to officers; for it is of the firſt importance in preſerving the health of a ſhip's company. It might have been extended to a much greater length, in explaining theory; but for practical utility it will be deemed ſufficient, as it fully unfolds the cauſes that generate foul airs.

The *Small Pox* continues to excite our vigilance: and the *Cow Pox*, that firſt bleſſing from the hands of medicine, is now received among ſea diſeaſes, on a prophylactic plan. I have only to regret that I could not accompliſh my purpoſe on this buſineſs.—*Catarrh*, *Pneumonia*, and *Ophthalmia*, are connected in one article.

The ſubject of *Phthiſis*, is a new diſcuſſion in *Medicina Nautica*. If the treatment of the diſeaſe receive no advantages from our animadverſions, the hiſtory of it is enlarged. The cauſes which have rendered it frequent in the Channel, eſpecially in 1800, are not calculated to raiſe pleaſurable feelings.

feelings. But what human being can brave variety of affliction equal to a Britiſh ſeaman!

Under the term of *Spaſmodic Affections*, I have introduced various complaints of the dyſpetic, hypochondriacal, and nervous kind. Theſe diſeaſes are by no means uncommon in a man of war at all times, but they have been very frequent of late. It is the more neceſſary to guard the inexperienced ſurgeon, as they are often miſtaken for complaints that require a different mode of treatment.

We continue to accumulate ſuch facts on the hiſtory of *Scurvy*, as may ſtill improve the method of prevention and cure. In this, as in ſome other ſubjects, we have looked beyond the mere means of cure; our views are directed to preſerve the ſtrength and vigour of muſcular action, for the purpoſe of enterprize.

Some valuable ſelections are made from the communications of our numerous correſpondents, as incidental to our plan. Parts of theſe are from the Mediterranean, which ſtation has been the ſcene of conſiderable activity during the operations in Egypt and Malta.

For the firſt time, we offer the plan of a *Sick Berth*, which is to be conſidered as the hoſpital of a ſhip of the line. I have alſo given a method of providing a *Diet for the Sick*, that is much ſuperior to any thing of the kind that has ever appeared in the navy. A mixture of regret accompanies this part of my work, that I have not been able to make this improvement general throughout the fleet and ſervice at large. But it is neceſſary to ſave it from the wrecks of time.—*Sea-Sickneſs* has alſo, for the firſt time, met with our notice.

The hiſtory of the *Malignant Ulcer*, by the additions of the preſent Volume, is rendered very full.

full. I wish I could say that they have pointed out any successful method of cure.

The contents of this Volume, in different parts, are so much a sequel to what I have written before, that it is necessary to remind readers of it, lest they should form opinions partially. For instance; in the article Contagion, where I have exposed the bad effects resulting from the impress service, it will be seen in the first Volume, that I had suggested means of guarding against all this calamity as a source of disease. In every disquisition it will be easily perceived, that the author has had one object in view, to which all others have been secondary.

Some parts of this Volume will point out to officers and surgeons the necessity of keeping a check on the arrangements in hospitals. I think the service is likely to be injured by making the appointment of captain and lieutenant permanent. A more certain good would have been secured by changing them every three years. We might by that means preserve all the improvements which take place in discipline throughout the service; as well as what relates to purification, ventilation, and cleanliness. This form would effectually prevent all that species of sloth and indifference which is natural to the constitution of an Englishman when he finds himself in possession of a snug house and good income. It is true, that these institutions are not likely to be again of that importance to the navy, that they were when they first attracted our notice: but it is proper to show what the service has escaped from, by way of preventing the recurrence of similar abuses. I do not mean from this to infer, that any accommodations in a ship can be made equal to those that ought to be found in an hospital; but while

diſcipline improves good health, and an effective force muſt naturally reſult. I continue to lament whenever ſervice becomes ſo urgent as to leave a brave man to die at ſea inſtead of an hoſpital: and the medical profeſſion, however wrapt in the ſolemnity of technicals, is at beſt a ſcoffer of human affliction when it deſerts the duties of ſympathy and benevolence. From this it will be known that I am no favourer of the new tenets, that hold forth very different examples.

The neglected ſtate of the naval hoſpitals aroſe partly from the ſmall ſtipend of the medical officers; but this could not juſtify ſome occurrences that I muſt relate; and which I leave as a warning to others. To ſome theſe examples may appear diſguſtful: ſo they are to my eye. When I hear of the medical attendant of a public inſtitution having accumulated thirty or forty thouſand pounds by the private exerciſe of his profeſſion; by an irreſiſtible impulſe of imagination the ghoſts of ſo many thouſands of brave men riſe to my view, who have fallen into premature deaths by unprincipled neglect.

At the beginning of this war a ſeaman fell from the top of a ſhip fitting at Plymouth, and was wounded dreadfully. He was immediately conveyed on ſhore, but nobody could be found to open the gate of the hoſpital. At laſt acceſs was obtained: but not a ſurgeon could be found; he was attending a gentleman of great fortune in Cornwall. It is to be added, the man died of the hæmorrhage from his wound.—Captains Rotheram, Sutton, and Worth can relate the particulars of this caſe.

A poſt-captain, ſo ill as to be carried on ſhore in his bed, came to ſick-quarters, and, for the convenience of ſuch attention as he required, to

the houſe of a friend. The firſt viſitor was a clerk, who demanded that he ſhould come to the hoſpital and anſwer muſter, or be *run* on the books. On the third day a private phyſician called upon him, ſaying that he came at the deſire of the ſurgeon of the Royal Hoſpital, who was attending the *accouchement* of Lady M.—— at ſixty miles diſtance!

This affair happened ſince the partial reform of the hoſpitals: and this was a part of the new morality.—Captain R. Dacres makes the caſe longer than I can.

To complete the deformity I will relate another incident, which happened ſince I came to this neighbourhood. An aſſiſtant ſurgeon had the duty of *bleeder*; that is to ſay, he came at a time, perhaps when it beſt ſuited his ſhop, to bleed the patients. The other aſſiſtants, who took the *receiving duty* in rotation, which confined them for a week entirely to the hoſpital, thought it but fair that the bleeder ſhould take this in his turn. To that he replied No, for he had extenſive private practice; and, to the contempt of all public ſervice, reſigned, when he could no longer make it a ſinécure.—A vacancy for phyſician ſoon followed; and this gentleman, who was now, by ſome miſtake or other, armed with a diploma, though his medical education was confined to a neighbouring village, had the effrontery to offer himſelf a candidate. To ſuch inſults the ſick-bed of a brave man may be expoſed, as if every haberdaſher in medicine were competent to the attendance of a naval officer and ſeaman! If there is any truth in this ſtatement, which is a ſmall portion of the whole, was there not a neceſſity for ſome perſon to ſtep forward and reſcue the naval ſervice from ſuch opprobrium?

By the countenance of officers ſolely have I been encouraged to perſevere.

Amidſt the deficiencies of Plymouth hoſpital a contiguous decent burying-ground is much wanted. The preſent one is a bit of waſte land belonging to the corporation of Plymouth, where the ſeamen have ſuch a diſlike to be laid, that on dying, if they have as much as will defray the expence of being carried to a church-yard, they leave a will to that effect. The regard of a grateful country ought not to quit the brave man even in death; his cold remains ought to be interred with ſolemnity and guarded from inſult; for theſe attentions inſpire his living companions with the love of their country.——The chaplain ought alſo to reſide within the walls.

The whole war has now paſſed over and no operation room has yet been fitted there. It is not decent to operate in a full ward, where the cries of the patient offend others. Even Haſlar hoſpital owes this improvement to the late Mr. Robert Dods; a man who performed ſome of the fineſt cures that ever came from the hand of a ſurgeon.—But I muſt ſtop here, for innumerable imperfections ſtill remain to be mentioned. In my enquiries into theſe departments, I ſolemnly profeſs to have *ſet down nought in malice.*

The farther our experience extends, we continue to view the Britiſh ſeamen in a character that differs widely from all others in poliſhed ſociety. Some of their diſeaſes in this Volume ſhow that the ſubject has not been exhauſted. The following anecdote, copied from life, is ſo ſtrong an example of their ſingular manners, that I cannot forbear to inſert it. It is communicated by Mr. Simpſon of the Fiſhguard. " Three years ago,

" when

" when I was ſurgeon of the Kangaroo, it was our
" misfortune to encounter a ſevere gale of wind in
" Dublin bay. By a train of adverſe occurrences
" we were compelled, at the imminent hazard of
" our lives, to cut our only remaining cable, and
" attempt to get over Dublin bar. This we
" happily effected after very ſevere exertions.

" When moored in ſafety in the river Liffey;
" the people, being obliged from the ſtate of the
" ſhip to be moved into a light collier, gave
" themſelves up to every exceſs which ſeamen,
" who have recently eſcaped from imminent perils,
" are then accuſtomed to. An almoſt general
" intoxication prevailed among the heedleſs crew
" during the whole night. The unvarniſhed tale
" of Othello was twice told over, with the addi-
" tion of every hyperbole which the fertile inven-
" tion of ſeamen, of drunken ſeamen, could deviſe*.
" The can went merrily round the whole night.
" But alas! the morning ſun uſhered in a ſcene,
" which, at this diſtance of time, thrills my heart
" while I relate it. Two boon companions had
" enjoyed themſelves in a ſuperior degree; both
" of them the day before in perfect health. They
" retired at bed-time to keep it up for the night,
" having by ſome means procured abundance of
" *whiſkey*. Libation after libation of this poiſon-
" ous draught rendered them inſenſible. When
" the hands were turned up next morning one was
" found dead, and the other ſitting by him with the
" greateſt marks of kindneſs and affection; alter-
" nately kiſſing him and offering him liquor; and
" encouraging him by every endearing expreſſion
" to drink, and then pouring it into his mouth.—

* *Vide* Vol. I. Diſcourſe 2d.

" By the utmoſt exertions the life of one was ſaved,
" but the other irrecoverably periſhed!

" Upon examining the pockets of the deceaſed
" the incloſed ſcrap was found, which I have care-
" fully preſerved. In theſe *formulæ* we have as
" well the method they have of entrapping a girl,
" as a rat and coney; excluſive of the means they
" uſe to deceive the doctor."

Theſe receipts partook of that credulity for which ſeamen are noted; and ſome of the ingredients were dangerous, ſuch as Spaniſh flies in the love potion. The rat, hare, and rabbit, were enticed by perfumes: the venereal diſeaſe cured by bitter apple, gamboge, and copaiba: ſome ſtimulating oils are ordered to excite ſwelling and inflammation: and a rupture to be produced by burnt cork, caſtile ſoap, &c.—Such are the men to whom this happy land of liberty owes her ſecurity! whoſe character forms the wideſt extremes to be met with in a human being.

The following paragraph is taken from the preface of Profeſſor Hufeland, to Dr. Warner's tranſlation into German, of the firſt Volume of MEDICINA NAUTICA.

" It is well known how much we are indebted
" to the Engliſh MEDICINA NAUTICA, for many
" improvements in our art. The preſent
" work is a new demonſtration of it; and it un-
" queſtionably claſſes among the beſt productions
" of the modern Engliſh medical literature. An
" exact acquaintance with the excellent manage-
" ment of the Engliſh Nautical Medicine muſt be
" pleaſing

" pleaſing to every one; and they will here per-
" ceive important and attentive practical obſerva-
" tions on typhus, ſcurvy, contagion, and the
" means of guarding againſt it; bilious fever,
" dyſentery, rheumatiſm, and on many other
" ſubjects. The Author, in his late Treatiſe on
" Scurvy, had brought himſelf under ſome ſuſpicion
" of being attached to hypotheſis; in this work,
" however, nothing of the kind is to be found.
" For the moſt part he delivers the reſult of pure
" experience, and treads the path of an undevi-
" ating obſerver of Nature. For inſtance, it is
" certainly no longer an hypotheſis that lemon
" juice is the beſt remedy for ſcurvy; ſince more
" than a thouſand caſes are here produced,
" which have been cured by that remedy alone;
" and the diſeaſe is always rendered worſe by
" brandy and other ſtimulating medicines. It is
" certainly a very important fact, and highly cre-
" ditable to the preſent age, where a part will
" explain every thing from ſtimulus, and nothing
" from chemical action on the change of matter.

" I am ſo much the more pleaſed, that the
" work has found a faithful tranſlator in M. D.
" Warner, and one who is ſo well verſed in both
" languages. And I muſt alſo remark, that the
" difficulties he had to encounter were greater than
" are uſual in tranſlations; becauſe the author's
" ſtyle is frequently obſcure and perplexed; and
" abounds with many almoſt incomprehenſible
" *nautico-technical* expreſſions.

" *Jona*, May 20, 1798."

For the Engliſh copy of this Preface I have to thank Mr. John Bell, ſurgeon's mate of the Caſtor, and now ſurgeon of the Pelican; a young man of great promiſe to his Majeſty's naval ſervice.

The candid opinion which the celebrated profeſſor and phyſician has been thus pleaſed to give on the merit of our labours is highly gratifying to myſelf, as it muſt be to the ſurgeons of the fleet, whoſe communications form ſo large a portion of the whole. I believe, however, it would not be eaſy for me to obviate the complaints of Dr. Huſeland and others againſt my ſtyle and manner, as the work has been compiled on the ſpot of naval duty, and at the intervals of relaxation from profeſſional viſits. What it loſes therefore in elegance of expreſſion, and accuracy of arrangement, it gains in the unvarniſhed details of practical occurrences, and in the faithful narrative of ſuch diſeaſes as claim animadverſion. Theſe remarks apply equally to the preſent, as to the preceding Volumes of Medicina Nautica.

With reſpect to the ſea-phraſes, ſaid to be almoſt incomprehenſible, ſuch a remark was likely to come from a phyſician who reſides in an inland part of Germany. But theſe phraſes are ſo familiar in the Engliſh language, from the navy being the conſtant theme of applauſe, as it is the bulwark of Great Britain, that they fall inſenſibly into our hiſtory of events.

There was one part of my eſtabliſhment that I ſhould have been proud to ſhow to the tranſlator and encomiaſt of Medicina Nautica; I mean Mr. Milligan's Bill of Fare in the Meduſa hoſpital ſhip, before Lord Bridport diſmiſſed the ſhip. They would have there ſeen Britiſh generoſity in its genuine form; a ſeaman recovering from ſickneſs ſitting down to a dinner that might have ſatisfied a prince; and prepared for him at the expence of the country.

A work on the Diſeaſes of Seamen, written a century ago, and the firſt on that ſubject, was lately put into my hands by Mr. Charles Wallace of the Renown *. This performance appears to have obtained a conſiderable degree of reputation; for the firſt Edition was ſoon tranſlated into Dutch by Profeſſor Bidloo, and was read by thouſands in the ſeaport towns of the Eaſt Countries. In the Preface he quotes paragraphs from Burchet's Sea Memoirs, to ſhow the importance of his ſubject; from which we learn that the poor navy ſurgeon had no remuneration for ſervices after his ſhip was paid off. A ſet of new men, as they are called, were therefore employed on all occaſions; ſo that medical knowledge of naval matters could never be acquired by long experience in one ſurgeon. Burchet, in his Memoirs, ſpeaks of expenſive expeditions being laid aſide from the unhealthfulneſs of ſeamen, as it has often happened ſince that period; but, although that has been leſs the caſe during the preſent war, human nature continues much the ſame. It is thus with the health of the public, of a fleet, or army, as we obſerve with an individual.

The Weſt India expeditions, of old times, like thoſe of the preſent war, had been often fruſtrated by the ſickneſs and mortality of men employed. Dr. Cockburn laid ſome propoſals before the Admiralty, which their Lordſhips thought proper to tranſmit to the College of Phyſicians for their

* Sea Diſeaſes; or a Treatiſe of their Nature, Cauſes, and Cure. Alſo, an Eſſay on Bleeding in Fevers, ſhowing the Quantity of Blood to be let in any of their Periods. The ſecond Edition, corrected and much improved, by W. Cockburn, M. D. late Phyſician of his Majeſty's Fleet, F. S and of the College of Phyſicians, London. Printed for George Strahan, London, 1706.

opinion,

opinion, before they were tried. The College, however, evaded the queſtion, and the Doctor's plan fell to the ground. This treatment, we obſerve, is very like what we have ſometimes experienced.

He enters at large into the nature of the ſea diet as the cauſe of ſcurvy; and inſiſts much, in his way of reaſoning, on the undigeſtibleneſs of the different articles; from which it is eaſy to ſee where Lind took his opinions of the production of that diſeaſe. Not a word is ſaid of recent vegetable matter, or any thing of a method of cure. The men recovering from other diſeaſes ſuffered much from this diet; indeed no delicate kind of food ſuitable to their appetites had been allowed. The uſe of tea and ſugar, now ſo common among our ſeamen, was then unknown. Like all the old writers on ſcurvy, he talks of the ſhulkers, a word ſcarcely known in the preſent day in the naval vocabulary as being moſt liable to it. "And to "confirm this obſervation," ſays he, "the people "that ſuffer moſt by diſeaſes on account of their "idleneſs aboard the men of war themſelves, are "boatſwain's favourites; for they are over-run with "the ſcurvy, while thoſe whom he with full power "and authority turns out to their watch, enjoy a "ſufficient ſtock of health, as do likewiſe the better "ſort of them, that put themſelves forward by be-"ing diligent in their buſineſs. This lazy temper "among ſome ſeamen, and moſt of the preſſed land-"men, is the true original of the genuine ſcurvies "that are commonly to be met with at ſea."

The ſeamen in thoſe days did not like the bargoo, becauſe they had too little butter to ſauce it. A few years ago we obtained ſugar or melaſſes for that purpoſe; but the benefit to the health of the people has in many ſhips been prevented from the

the avarice of the purſer, who neglects to demand them, as the ſaving of oatmeal is of great conſideration.

How like to ſome occurrences in this Volume is the following remark on the *lodging* of ſeamen: "This is as convenient, warm, and eaſy, as may "be at ſea, and for ſuch a number of men; yet "what by the pilfering of hammocks one from "another, their lying on deck, or betwixt decks, "when they are pretty warm after a can of flip; "and the preſſed men's real want of clothes they "ſenſibly contract a cold, which is the beginning "of moſt of their miſeries." This leads him to the production of Fever; and he finiſhes with a philippic on the chemical pathology of that day.

In Part II. ſpeaking of means taken to provoke ſweat, "and the Iriſh of old, by lapping them-"ſelves up in blankets thoroughly wet in cold "water." Can any modern phyſician deſcribe this proceſs and its effects on the acceſſion of fever?

Having related Dr. Willis's caſe of the young woman in fever who wiſhed to go a ſwimming, being indulged ſhe recovered; he then adds, "Some ſuch like caſes happen very often to our "ſailors, who in the time they are delirious, or "have calentures, (this word our ſurgeons uſe "for violent fevers, yet it is only a general word "in Spain for a fever,) when lying in their ham-"mocks in a calm ſummer's day, they ſee the "ſea through the gun ports very plain and ſmooth, "and imagining it to be a green meadow, get up a "walking, and fall into the ſea, if they are not "ſtopped in their way; but if they get at laſt into "their hammocks, they ſweat at laſt very plenti-"fully (after the ſouſing. T. T.), and ſhake off "their fever." Is not this nearly allied to the practice

practice of Dr. Currie, the affuſion of cold water? The ſurgeons of the preſent day give no ſuch account of this diſeaſe (phrenitis), which was ſaid to be peculiar to the Mediterranean.

He next ſpeaks of the good effect of bliſters in fevers; and relates caſes of ſucceſsful practice as well in fevers and ague by opium, quinaquina, &c.

In Obſervation XV. is a caſe of ſcurvy, where he reaſons like a modern, and preſcribes recent vegetables, and an antiſcorbutic electuary ſucceſsfully; and laments that there is no proviſion made againſt the diſeaſe. The forms adopted by ourſelves during the preſent war, effectually correct all former abuſes.

In Obſervation XVII. he has forgot entirely that he was phyſician to his Majeſty's fleet, aſſumes the character of an empiric, and conceals the name of a medicine that he gave in diarrhœa; "*a doſe* "*of a powder I give in ſuch caſes.*"!! Again, he ſays, "I conceal this medicine becauſe I think "it better than the Fr. ipecacuanha itſelf, by "which Helvetius made ſo plentiful a fortune." He now ſhows a cloven foot; *auri ſacra fames!* This is the ſpirit of mammon that has oppoſed the progreſs of benevolence, as well as medical ſcience in naval ſtations. But in attempting to correct it, alas! one ſwallow, I find, does not indeed make a ſummer!

In Obſervation XXVII. is a caſe of *melancholia hypochondriaca* in the captain's clerk of the Edgar, very much like what we have often met with in the fleet. He treats it, judiciouſly, with a vomit, purge, and a ſtrengthening electuary, adapted to the dyſpeptic ſtomach.

In Obſervation XXVIII. is a caſe of gonorrhœa, when quackery again is diſcovered. Which he cured "without one grain of mercury; turpen-
"tine,

" tine, decoctions of woods, injections, and other " medicines. I could very willingly communicate " this way of curing for public uſe, if I might *in* " *honour*; being no longer at my own liberty to " diſpoſe of it, ſince I have communicated this " method to a *learned member of our college*, in " exchange of a practice he values very much." *Oh! tempora!* Pretty fellows of a college: *Par nobile fratrum!*

The Eſſay on Bleeding in Fevers, is the weakeſt part of the book, and is rather a jargon of words than ſound reaſoning on practical facts.

From what we obſerve in page 100, the phyſicians of fleets at the beginning of the laſt century had to treat a body of men ſubject to the ſame exceſſes and indiſcretions as thoſe of our own times. They had " their Saturday evening cabals, " where they remember their wives;" which, when moderate, might be lawfully encouraged, and was ſaid to aſſiſt the digeſtion of the diet. " But are often ill huſbands, exchanging all at " once, and deſtroying the whole purchaſe at a " down-ſitting; ſo that being got drunk, and not " being able to crawl into their hammocks, they " ſpend the night faſt aſleep upon the cold deck, " and contract thoſe ſickneſſes which attend an " interruption of tranſpiration."

I could have wiſhed to inſert ſome important ſurgical caſes into this Volume; but the preſcribed limits would not allow it. Theſe were conducted with uncommon ability, by Mr. Smith of the Pompée; Mr. Willes of the Centaur; Mr. Clifford of the Courageux; Mr. Allen of the Formidable; Mr. Lloyd of the Barfleur; Mr. Magie

of

of the Princeſs Royal, now ſurgeon of marines at Plymouth; Mr. Cumings of the Ramillies; and a recovery after an amputation of the thigh, where the previous loſs of blood had been ſo great that the patient ſcarcely appeared to live, for the firſt fortnight, by Mr. Bury of the Unicorn. On the whole; as far as I have been able to learn, in both general and ſingle actions, the abilities, attention, and humanity of the ſurgeons have kept pace with thoſe aſtoniſhing exploits of the naval officer and ſeaman, that have attracted the applauſe of the world. But the want of aſſiſtants, from the deficiency of ſurgeons' mates, has been complained of every where.

From the intereſt which I have taken in the cauſe of medical officers from my firſt becoming an author, the ſubject naturally recurs to me, in bringing this laſt of my labours to a concluſion. I muſt therefore invoke the different tribunals of ſcience and literature, as they may honour this Volume with a peruſal, that they would well conſider the arguments which I have produced in favour of increaſed encouragement to theſe gentlemen. Phyſicians to fleets are equally ſubject to a narrow eſtabliſhment with ſurgeons; and one of the moſt painful conſequences of a ſmall income, muſt be the inability to keep pace with the progreſs of medical ſcience in the purchaſe of new books. With this laſt wiſh in behalf of a body of men to whom the public owes much, I now conclude; and thus,

My beloved Navy!
Farewell!

Cawsand Bay,
Feb. 26, 1802.

March 30th.—To the undermentioned ſurgeons of the Navy Liſt, I have to offer thanks for a compliment of uncommon value. A compliment that lays me under the more obligation, as being conferred at a time when, neither from perſonal or official ſituation, it was in my power to make them any return. The medical records of the fleet will derive credit from this tranſaction, as a pledge of that friendſhip and harmony which have cemented our duty in behalf of the public ſervice. The profeſſion of medicine has acknowledged a flattering regard to this compilation; and in the preſent inſtance, I truſt, it will find a larger compaſs of practical matter, than has uſually been given to the world in a ſingle volume.

Inſcription on a Maſſy Urn.

DOCTORI THOMÆ TROTTER;
CLASSIS REGIÆ MEDICO PRIMARIO;
MULTA DE PATRIA BENE MERENTI;
HOC MUNUSCULUM,
PIGNUS OBSERVANTIÆ SUMMÆ,
CHIRURGI NAVALES
LUBENTISSIME OFFERUNT:
ET PUBLICÆ SALUTIS, ET PRIVATÆ AMICITIÆ
TESTIMONIUM SACRUM ESSE
VOLUERE.

1802.

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Jno. Landleſs - -	Powerful.
Jno. Bell - - -	Pelican.
James Farquhar -	Captain.

MEDICINA NAUTICA.

PROPOSALS *to Lord* ST. VINCENT *for meliorating the Eſtabliſhment of Medical Officers.*

THE following Letter was addreſſed to Admiral Earl St. Vincent, when he took his ſeat as Firſt Lord of Admiralty; with a view of furniſhing his Lordſhip with ſome connected ſtatement of the medical eſtabliſhment.

MY LORD, Plymouth Dock, Feb. 22, 1801.

The Gazette of the day having announced your Lordſhip's promotion to the Firſt ſeat at the Board of Admiralty, I eagerly ſeize the pen once more in ſupport of a cauſe that has long engaged my ſtudies. Diſappointed as I have been hitherto, I ſhould expect redreſs from no other noble Lord aſſuming your office, and might on that account have declined to proſecute the inquiry farther. Your Lordſhip is therefore the only Peer from whom I can hope for ultimate ſucceſs; for you muſt be better acquainted with the ſubject as a naval character and profeſſional man, than any

other miniſter. Should my repreſentations be ſtill in vain, I truſt theſe Propoſals will not be conſigned to the deliberations of any inferior Board, or run the hazard of being ſunk in the mud of the Thames with the other official lumber of Somerſet Houſe.

The Earl St. Vincent, of the third order of the Peerage, in the poſſeſſion of all the honours of his profeſſion, with a large fortune acquired by ſplendid ſervices, now deſtined by the confidence of his Sovereign to wield the naval power of Great Britain, againſt the combined fleets of Europe, can have nothing left more gratifying to his wiſhes or to his ambition, than to furniſh the ſick-bed of a brave man with thoſe comforts and attendance which, if they cannot always preſerve life, at leaſt cheer the paſſage to diſſolution.

If I am unable to do juſtice to the taſk I have undertaken, my capacity ought to be blamed; my zeal will not be diſputed; and I have ſeen, heard, converſed, and thought more on the ſubject, than has fallen to the ſhare of any other medical character.

A Prince of the Blood, not more illuſtrious from his rank than for his humanity, himſelf a ſoldier, has procured ſuch encouragement to the medical officers of the army, as far ſurpaſſes every thing connected with the naval eſtabliſhment. And very recent debates in the Houſe of Commons teſtify how well diſpoſed that Aſſembly is, to extend the bountiful proviſion of the Royal Commander in Chief to the militia ſurgeon *.

* See the ſpeeches of Lord Caſtlereagh, Colonel Elſond, and Mr. Sheridan, for providing half-pay for militia ſurgeons.—Seſſion of 1800.

The

The queſtion now turns; are the phyſicians and ſurgeons of the navy to be ſtill doomed to poverty and neglect, amidſt ſuch unanimous and generous national favours to the army.*? No advocate within the walls of either Houſe of Parliament has yet ſtood up to ſay, that the Phyſicians of the Royal Navy have no adequate eſtabliſhment; that one half of the navy ſurgeons have no half pay at all; and that thoſe who receive it, are ſcarcely allowed one half of the ſum given to the army ſtaff. Under ſuch afflicting circumſtances, and ſuch apparent partiality, they muſt naturally look to an officer at the head of the Admiralty, who

* Nothing can more ſtrongly exemplify the ſuperior encouragement given to the army medical eſtabliſhment over the navy, than the facility with which ſome ſuperb hoſpitals have been reared during the late war at Goſport, Plymouth, &c. while to the navy, at three of its principal ports, to wit, Yarmouth, the Downs, and Torbay, a few mean buildings have been huddled up for the accommodation of the ſick.

The army phyſicians are upwards of 60 in number, with a pay of from 3l. to 1l. per diem; and half pay unconditionally. There are four phyſicians on the navy liſt at 1l. *per diem*; but have no half-pay. The ſurgeons on the army ſtaff have 5s. half pay; the regimental ſurgeon 3s. half-pay, and 5s. after five years' ſervice. Of the navy ſurgeons, 20 have 5s half-pay after nine years' ſervice; 100 have 3s. after ſeven years; and 200 have 2s. 6d. after five years' ſervice, which leaves between 360 and 400 without any half-pay.

It is not that I envy the army gentleman either their titles or eſtabliſhment; for I apprehend no money is equal to the drudgery they have encountered this war, in their profeſſional duty: for not only diſaſter, but uncommon ſickneſs, have followed our armies everywhere. But I have a right to feel for the reputation of the navy, committed by the deficient encouragement to medical officers, after a war crowned by victory and health.

The compariſon is ſtill more humiliating to the navy, when it is known that ſurgeons' mates of the army have 2s. 6d. *per diem* for half-pay. The interior of naval hoſpitals is alſo deficient in all that is eſſential and commodious to ſickneſs, when compared with army arrangements.

knows their value, and can feel for their ſituation. If you, my Lord, ſhould treat the cauſe with indifference it muſt be abandoned as deſperate.

While the naval proweſs of this country has confeſſedly, in the preſent day, tranſcended all its former greatneſs, it is nothing more than ſound policy, to preſerve by every means our exalted ſuperiority. It has not been by a cultivation of the mathematical ſciences that the nation has earned thoſe laurels; thoſe ſciences, however they may contribute, they cannot ſecure the laſting poſſeſſion of our naval power. Our greatneſs is ſolely due to the *unrivalled excellence in practical ſeamanſhip of our officers and ſeamen.* It is therefore the *vital part* of the machine that is our glory. No people on earth can wreſt from us this prerogative; but diſeaſe may rob us of health; and a medical eſtabliſhment, duly adminiſtered, can alone preſcribe thoſe means of prevention from ſickneſs, which has often, and may again unnerve the naval arm.—Let not then, my Lord, the precious hours of your adminiſtration, at this momentous juncture, be waſted in viewing the models of viſionary or plodding projectors, or in ſurveying the new mud-ponds of our dock-yards *; the *living powers* that put ſhips in motion are more worthy the attention of Earl St. Vincent.

Taking the ſurgeons on the navy liſt collectively, they may be juſtly compared to any other body of profeſſional men; ſome very capable, and others perhaps not. There are many of the number ably qualified for the duties of the ſtation;

* One of thoſe clumſy fabrics had lately given way; where more money was ſunk than would have preſerved the health of the navy for ever: as if a warning to ſtateſmen, not to expend on timber and ſtone, what might have ſecured the vigour of the living machine for ages.

liberally

liberally educated, and equal to the exercise of the art in any situation. But men thus duly informed cannot be thought to consider themselves bound to a department of public service, that affords them only a slender present support, and holds out no provision for the infirmities of age. Hence the best qualified surgeon will be the first to quit the navy when opportunity offers, and look to private life for the reward of his talents and industry. Poverty alone can confine him to a sea-life. I believe this fact is daily exemplified among us; and we are only surprised that it does not happen more frequently.

On a subject that has been so much discussed, I need not encroach on your Lordship's time by further arguments: that the naval medical establishment is every where defective, has been universally admitted; and your Lordship's experience and discernment must have long ago assured you of the truth of my assertion.

The provision made for the surgeon when employed has not been complained of; in that respect they might be satisfied, at least in the larger ships. But the manner in which these emoluments are levied on the service deserves immediate correction. By way of example I shall narrate the *items*, which collectively make up the pay of a third rate.

5l. per month personal pay	—	65l.
2d. per month for 600 men	—	65l.
5l. per 100 in lieu of venereal fines		30l.
Free gift, as called —	—	43l.
Commutation for servant	—	11l.
	Total—	214l.

Out of this ſum the ſurgeon is to provide himſelf with inſtruments and part of the medicines. I ſay a part, becauſe a gratuitous ſupply, at the diſcretion of the Sick and Hurt Board, has been allowed by government for ſome years paſt. We thus obſerve, that the emoluments when in actual ſervice are not unequal; unleſs a ſickly condition of the ſhip happens, for which no proviſion is made. But it would appear much more like a ſyſtematic mode of conducting ſervice to condenſe all theſe items into perſonal pay at a fixed ſum *per diem*. I will exhibit a form with that view, under certain limitations, as near as is conſiſtent with the preſent emoluments; and then a form of half-pay, with proper reſtrictions; the whole to be followed up with an eſtabliſhment for ſupplying inſtruments, medicines, neceſſaries, and every kind of ſtores connected with the medical department at government expence.

PROPOSALS *for Surgeons' full Pay.*

First Rate, 15s. *per diem.*—No ſurgeon ſhall be eligible to a firſt rate, till he ſhall have ſerved ſeven years; in which ſhall be included two years' ſervice as mate.

Second Rate, 13s. *per diem.*—Qualification, ſix years' ſervice, including two as mate.

Third Rate, 11s.—Qualification, five years, including two as mate.

N. B. The commutation of ſervant's pay is to continue to every ſurgeon.

Fourth Rate, 9s. 6d.—Four years, including two as mate.

Fifth

Fifth Rate, 8s.—Three years, including two as mate.

Smaller veſſels, 7s.—Two years as mate.

FORM *of Half-pay.*

200 Surgeons, 5s. *per diem*, after ten years actual ſervice, which ſhall include three years of mate's time.

200 ditto, 4s. *per diem.* after eight years' ſervice, which ſhall include two years of mate.

The remainder of the liſt, 3s. *per diem*, after ſix years' ſervice, which ſhall include two years as mate.

Every ſurgeon, after eighteen years of actual ſervice, which ſhall include four years as mate, ſhall be entitled to retirement, on the half-pay he may then enjoy from his rank. This ſeems the more reaſonable, as no man can be deemed equal to perform operations in ſurgery at ſea after forty-ſix; when the eye-ſight begins to fail naturally, and when the muſcular power that gives ſteadineſs to the hand of the operator alſo declines. But before ſurgeons, according to the rotine of duty, could complete this number of years, they muſt be upwards of fifty years of age; and therefore the preſent forms of ſuperannuation are entirely ſuperfluous.

The full pay ſhall be paid every three months, three months being reſerved in caſe of default of ſtores: the half-pay to be paid as in the preſent form.

I am alſo of opinion, that mates ought to be paid every three months by bill. The preſent method of payment to theſe gentlemen is a grievous

vous hardſhip: and few young men, after an expenſive education, can afford to ſupport themſelves till the ſhip is paid; ſometimes not for many years when employed on a foreign ſtation.

It is one of thoſe ſingular but odious cuſtoms, which we often meet with in old eſtabliſhments, that a private individual ſhould furniſh, out of his emoluments of pay, the articles wanted for public ſervice. Such is the ancient rule in the navy, that the ſurgeon muſt provide medicine and inſtruments. It opens a temptation for withholding comforts from the ſick-bed, that in many ſituations may affect life; and the virtue of no human being ought ever to be put to the teſt. Such a reflection as this offers, ſuperſedes the uſe of further arguments: Government ought therefore to ſupply every article that comes within the deſcription of medical ſtores. In order to connect this buſineſs with naval forms, and to expedite ſervice, I propoſe that diſpenſaries, or ſtorehouſes, ſhall be opened at the naval ſea-ports, to ſupply ſhips with theſe articles when wanted; to be demanded by the ſurgeon, under the authority of his captain, in the uſual manner. Four general diſpenſaries would be required for this buſineſs, under the direction of a ſurgeon who has ſerved ten years in the navy, with a ſalary of 200l. *per ann.* and houſe-rent. Theſe diſpenſaries ſhall be at London, Chatham, Portſmouth and Plymouth. Ships on foreign ſtations ſhall be ſupplied at all places where naval ſtores are kept, under the care of a mate or ſurgeon of the liſt, with a ſuitable ſalary. The whole ſhall be duly furniſhed with clerks and porters. Neceſſaries for the ſick, as at preſent in uſe, ſhall be demanded *only* when wanted. The directors of the diſpenſaries ſhall be ſworn into office; and the ſurgeons ſhall take an oath annually,

nually, when paſſing accounts, that no unneceſſary waſte may be committed *.

The Commiſſioners of Sick and Hurt, ſhall order the diſpenſaries to be duly furniſhed with all ſpecies of ſtores for the exigences of ſervice.

The medical eſtabliſhment being thus completed, and ſuitable encouragement given, government will have a right to preſcribe forms of ſtudy for naval ſurgeons, which can alone ſecure perſons duly qualified for the office. A term of ſtudy, which comprizes in two years two courſes of lectures, on anatomy and ſurgery, medicine and chemiſtry, with at leaſt ſix months' attendance at

* During the war, the *gratuitous* medicines have been ſupplied to the fleet from the ſhop of a common druggiſt in Plymouth Dock. No ſurvey, no check or ſcrutiny on the part of ſervice were directed; in this manner they were ſent on board; and there is ſcarce a ſurgeon that did not complain of the quality, and many who found the weight very deficient. The globules of quickſilver in the *Ung. Hydrarg.* were ſometimes found as large as ſparrow ſhot. What man can have effrontery enough to juſtify ſuch a mode of ſervice? A carpenter may as well go and buy a mainmaſt for the Royal George at a joiner's ſhop!

I have often known ſhips ordered to ſea in a hurry, when a ſet of inſtruments could not be procured on any terms. I even remember a ſhip of the line joining the fleet without inſtruments; and when in ſight of the French fleet the ſurgeon came to the hoſpital ſhip to be ſupplied. The captain of this ſhip informed me, after the action, that if the crew had known that no ſurgical inſtruments were on board, he doubted whether they would have carried the ſhip into battle. It is an unpardonable defect, that articles of ſuch importance ſhould be left to ſo much uncertainty. In one inſtance of this kind, the Port Admiral could not give an order for the ſurgeon of another ſhip in dock, to give up his inſtruments, becauſe they were *private property!*

If matters are thus ſo badly arranged at home, they muſt have been ſtill worſe on diſtant ſtations. In the ſickly condition of ſome ſhips in the Weſt Indies, the ſubject is too diſtreſſing to reflect upon. In the Eaſt Indies, from Mr. Nagle's account, ſervice ſeems to have been left to itſelf in the whole arrangements of medicine.

ſome

ſome reputable public hoſpital, would be requiſite; excluſive of the uſual apprenticeſhip as apothecary, which ſhall not be leſs than two years. Undeniable certificates ſhall be produced of theſe forms of education, for every one who is candidate for a ſurgeon's warrant. Mates of the ſecond claſs and under may be admitted on eaſier terms *.

PHYSICIANS.

I would recommend an increaſe of pay to the phyſicians, at the following rate, to give them alſo the ſame encouragement as thoſe of the army.

To the phyſician of the fleet ſerving under the Union Flag, 2l. *per diem*, and 1l. for half-pay.

To a phyſician of a ſquadron of twenty ſhips of the line, 1l. 10s. *per diem*, and 15s. half-pay.

To phyſicians of ſquadrons, 1l. *per diem*, and 10s. half pay.

* It may be obſerved here, that I depend very little on any method of examination for the qualification of ſurgeons; at beſt they are uncertain. The half informed candidate may even be ſometimes preferred to the more intelligent ſtudent. A modeſt and diffident young man, though maſter of his profeſſion, may be ſo embarraſſed under examination, as to appear ignorant, while the more forward may gain credit for wiſdom he does not poſſeſs. But the queſtions uſed in paſſing are often learned by rote; while a good education gives a more certain ſecurity for abilities. A knowledge of anatomy can only be learned by diſſection of the body: operative ſurgery cannot be acquired from books: chemiſtry muſt be taught by proceſs and experiment; and clinical medicine can only be known by ſeeing the ſick treated. If a young ſurgeon goes on board without having acquired knowledge in this manner, to what a fate may our officers and ſeamen be expoſed! No ſick man in public ſervice ought to have ſo little ſecurity, for an able medical attendant, as the forms at preſent ſupply.

No

No ſurgeon ſhall be promoted to the rank of phyſician under five years' ſervice as ſurgeon and mate; and their degrees as Doctors of Medicine ſhall be obtained in a regular manner from the Univerſities where they have ſtudied the uſual terms *.

HOSPITALS

Are ſo intimately connected with naval ſervice, that an arrangement ſimilar to what takes place in other departments, with ſimilar reſtrictions, is alſo neceſſary in theſe; that they may be filled with perſons fully qualified, and to be taken from the navy liſt on the ſame terms as phyſicians to fleets and ſquadrons.

Phyſicians 1l. *per diem*, and

Surgeons 15s. *per diem*; to be paid without deductions. They ought to be lodged in houſes

* Phyſicians holding naval appointments who have received the degree of Doctor in Medicine in a regular form, from the Univerſity where they ſtudied:

Year.	Appointment.	Inaugural Diſſertation.
1755.	Dr. WILLIAM FARR, Royal Hoſpital, Plymouth.	De Uſu Mathematices et Philoſopiæ Naturalis in Medicinæ Studio. Edinburgh.
1765.	Dr. ROBERTSON. Royal Hoſpital, Greenwich.	De Scorbuto. Edinburgh.
1788.	Dr. THOMAS TROTTER, Phyſician of the Fleet.	De Ebrietate, ejuſque Effectibus in Corpus Humanum. Edinburgh.

All the others, including the whole Commiſſioners of Sick and Hurt, have been obtained by *proxy* elſewhere!——Such is the ſtate of MEDICAL HONOURS in the ROYAL NAVY OF GREAT BRITAIN, at the cloſe of a nine years' war, and at the beginning of the nineteenth century!!!

within the walls; and the private exercise of the profession *totally*, *not partially*, abolished.

All the assistants of these hospitals ought also to be lodged within the walls, with suitable apartments, and allowed the house provisions. At present they live at a distance, and many of them keep shop. These gentlemen ought to have served as mates, at least one year on board, before they can be appointed; from the hospitals they might then be eligible to promotion as surgeons of ships. This form of duty would tend to improve their surgical knowledge, which, in the end, must make them more valuable to service. Assistants to hospitals, under these regulations, might be considered as candidates for promotion, and the commissioners of Sick and Hurt would thus have surgeons on the spot, always ready to fill vacancies on emergency.

(The next paragraph not being connected with this subject, I have therefore suppressed it.)

Having thus proposed an eligible plan of encouragement, that would bring the navy near to the army in its medical pay, I apprehend, in the present condition of the list, Government would have a right to exact some adequate return and security for its bounty. There are many surgeons, I am aware, who have received no education beyond a provincial town: from such, I think it would be but fair to withhold this remuneration of half-pay, till they have gone through the course of medical studies prescribed above. I mean no less than that they should return to school to complete their education. Government would by these terms improve the whole *corps*. I would even at present

ſent recommend, that government ſhould demand from the ſurgeons ſuch certificates of education as they can now produce, that the ſubject might be viewed in its proper light, and the abilities of the liſt fairly balanced. Such a ſcrutiny might perhaps be attended with ſome unpleaſing diſcoveries; but it is only juſt that the ſervice ſhould know how to place dependence. There is nothing where the confidence of mankind is ſo eaſily duped or miſled, as in the profeſſion of phyſic; where flattery is too often ſubſtituted for talent; evaſion for explanation; and a grave exterior deportment aſſumed to conceal a weak and uninformed mind.

But there are other changes as much to be wiſhed as thoſe now mentioned. It would be well to transfer the patronage of the ſurgeon's liſt to the Admiralty. Your Lordſhip has ſeen ſome occurrences in the channel fleet that ſtrongly ſpeak for this alteration. Phyſicians ought to have nothing more to do with theſe appointments, beyond a recommendation, when they meet with a meritorious officer. The habits of profeſſional men render them very unfit for this ſpecies of official duty: let them be confined to their medical ſtudies; make their ſalaries ſufficient, and debar them from *private fees*; you may then expect that due attendance can be enforced in hoſpitals and every where elſe; but example will be the more dangerous if it begins at the head of the department *.

I would

* Nothing can be more indecent than a member of a Public Board traverſing the metropolis in the private exerciſe of his profeſſion. A phyſician in private practice muſt be punctual in his viſits, otherwiſe another may be called in; and thus his thoughts are turned from a ſickly fleet or army, But it appears to me that the man who decoys a Commiſſioner of Sick, and

I would alſo recommend two inſpectors of health, to correſpond with the Admiralty only; to be conſtantly in motion, and to inſpect all hoſpitals, guardſhips, ſlop-ſhips, convaleſcent ſhips, priſons, and priſon-ſhips, ſhips fitted for carrying troops, tenders, and all the private ſick quarters over Great Britain and Ireland. They ſhould watch and regulate the internal economy of health in all theſe, and make occaſional repreſentations to their Lordſhips. Owing to the want of a qualified medical officer for this duty, ſuch numerous and dangerous diſeaſes have been generated in tenders and guardſhips, as to threaten at different times the health of the whole navy.

Government, on ſome occaſions, have been obliged to proſecute ſurgeons, who are contractors for private ſick quarters, for the moſt inordinate extortion. Theſe are appendages to the navy that Commiſſioners for Sick and Hurt have never been in the practice of viewing.

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and Hurt, a phyſician of a fleet or naval-hoſpital, to give advice for a guinea, is guilty of ſomething that approaches near to bribery, and liable to proſecution. If a member of the army medical board, on viſiting a private patient, ſhould caſt his eyes on a news-paper lying in the ſick chamber and read the following paragraph, would he not bluſh? London, Jan. 6th, 1801, "We are ſorry to hear that the yellow "fever is again making great ravages at Martinique; the "68th regiment, in *two months*, has loſt 660 privates, and 25 "officers."——I highly regard the profeſſional talents of all theſe gentlemen of both boards, and it grieves me to the heart that they ſhould by any means be drawn from public ſervice: it is the cuſtom that I reprobate, not the individual.

In the event of a future war, I would recommend Government to ſtation the two medical boards at Blackheath; that their deliberations on the health of our fleets and armies may never be ſuſpended by the temptation of a fee: there they would learn ſelf-denial.

From

From the out-ports, tenders have come with new-raiſed men to man our ſhips, where I have known ſuch abuſes, as well on health as on other matters, as ſurpaſs all belief. I have known a guardſhip having for months together near two thouſand men on board; a grave to health, as well as to order and diſcipline!—In ſhort, the medical arrangements ſeem ſtill in infancy.

The ſketch I have now the honour of laying before your lordſhip, can only be called an *outline*: the minutiæ muſt be completed afterwards. But it is in vain to think of improving the department, or to fill it with reſpectable abilities, till the abuſes are corrected from the foundation. The whole fabric muſt be built anew. It is meant in this plan to combine the welfare of public ſervice with the intereſt of the individual. It is ſuppoſed to be calculated to excite emulation and activity throughout the different gradations of rank: and to aſſure the ſurgeon, that in proportion to the fair and manly exertion of his talents, his chance of promotion is increaſed; and in proportion to his length of ſervice his emoluments become greater. This applies to the mate as well as the ſurgeon; for it can only be by a progreſſive encouragement, that any gentleman liberally educated in the medical profeſſion could attach himſelf for a ſingle hour to the ſtation of a ſurgeon's mate in a ſea-life *.

T. TROTTER.

* It is not in every ſituation of ſervice that a ſurgeon's mate has it in his power to diſtinguiſh himſelf: but among wounded men, after an action, or in a ſickly condition of a ſhip, activity, talents, and humanity certainly become conſpicuous. The navy, hitherto, has been unfavourable to the reward of medical abilities; there is little probability of it being ſoon otherwiſe.

June 30, 1802. Juſt as this work was going to the preſs, the news-papers give the account of ſome additional half-pay to naval officers. But it does not appear that a ſingle word has been ſaid of phyſicians, ſurgeons, or ſurgeons' mates. We are indeed an unfriended part of the community! Mr. Addington, himſelf the ſon of a phyſician, even ſpeaks of the ſurgeons to look for bread from the merchant-ſervice, as merchant ſhips are now to carry ſurgeons. But ſurely the nation ought to reward its own ſervants. Let me bring the buſineſs a little nearer to the Miniſter's feelings. Would

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otherwiſe. Amidſt the other valuable precedents which took place after the firſt of JUNE 1794, was Earl Howe's attention to the firſt mates of all ſhips of the line; who were immediately promoted, as they completed the limited time of two years' ſervitude. Much as this generoſity was applauded, it has not been imitated by other commanders in chief in the ſucceeding general battles, that covered our navy with additional glory, and gave promotion to all other claſſes of officers.

The following circumſtances, however juſtly they impeach medical arrangements in the naval department, are ſo honourable to the character of the profeſſion, that I cannot forbear mentioning them.

In October 1799, Mr. Duke, ſurgeon's mate of the Quebec, then at Providence, was appointed ſurgeon of the Fox ſchooner, which was about to carry the Indian General Bowles to North America. Neither medicines or inſtruments could be procured. The Fox was wrecked on the Bahama Iſlands twelve days afterwards, and the crew were great ſufferers. One man had a dreadful ulcer on the ancle; which daily grew worſe, and the patient had no proſpects of life but from amputation. But there were no ſurgical inſtruments. Mr. Duke therefore reſolved on taking off the limb with a ſmall knife and a joiner's ſaw. He ſucceeded; the patient recovered, after undergoing all the hardſhips of famine. Mr. Kein, ſurgeon of the Queen, took care to ſtate this caſe to Sir H. Parker, and Mr. Duke was appointed ſurgeon to the Sprightly. The attention of the ſurgeon to his patient was ſo great, that he had often to ſhoot birds in the woods for his ſubſiſtence!

this

this accompliſhed Stateſman, the conciliator of party, unaſſuming as he is at the head of the Treaſury, would he like to quit his preſent office, to be made a collector of the cuſtoms at Newcaſtle or Hull? The change hinted at would be as ſad a reverſe to the navy ſurgeon. Gentlemen who have expended a ſmall patrimony on the ſtudy of their profeſſion, without half-pay muſt be left deſtitute. I ſpeak from experience at the end of the former war. The ſenſibility which accompanies the profeſſional character, muſt be deeply wounded by this neglect. In the duties of our ſtation we become inmates with our officers; we mix in their friendſhips, and ſhare in their confidence. We attend them in the hour of bodily affliction, when their inmoſt ſecrets, their deareſt concerns are intruſted to us; and they often expire in our arms. This frequent communication learns us to partake of their heroiſm, and we grow jealous of every thing that detracts from the naval reputation of the country.

One of the great comforts attending my labours, has been the thought of theſe Volumes being conſidered as ſo many vouchers in favour of the medical officers, during the glorious atchievements of the navy. No London phyſician has told in the circle of his acquaintance, that "*he has ſeen* "*us ſhuddering at the threſhold of contagion, and* "*feeling the pulſes of our patients by proxy*," as Dr. B—g—n, formerly aſſiſtant to a priſon hoſpital relates of a certain fumigating adventurer. We have preferred no exorbitant claims on the bounty of the country: why then withhold encouragement equal to the army medical eſtabliſhment. *Ruat cælum, fiat juſtitia!*

MEDICINA NAUTICA.

Occurrences *relating to* Health *in the Fleet.*

1799.

In January, a ſquadron of ſeven ſail of the line was ordered to ſea, under the command of V. A. Sir Charles Thompſon. Theſe ſhips encountered much bad weather, but with little effect on Health.

On the 6th of this month, a child on board the Queen Charlotte was brought by its mother to Mr. Burd the ſurgeon, for ſome ſpots on its body, which at firſt ſight were pronounced to be ſmall-pox. The child was immediately ſent out of the ſhip; the diſeaſe turned out to be confluent, and the patient died. Between the 6th and 16th three other children were ordered on ſhore in ſmall-pox.

The effluvia which propagate the variolous diſeaſe, being ſo plentifully exhaled from a large crop of puſtules, we need not be ſurprized that it ſhould ſpread rapidly. The eruptions on the firſt child muſt have been ſomewhat advanced, as they were at once diſtinguiſhed to be variolous; at leaſt, beyond the third day, which is the laſt period we can

can fix for ſecurity againſt infection. Theſe caſes terminated the progreſs of the diſeaſe in the Queen Charlotte.—Amidſt other regulations of Health, would it not be a good plan to inſpect every child that comes on board; for this is a very frequent conveyance of ſmall-pox contagion?

Previous to leaving port, Sir Charles Thompſon had complained of ſlight febrile ſymptoms, and ſore throat, but which were not conſidered beyond a common cold. He exerted himſelf much while at ſea during bad weather; the feveriſh indiſpoſition increaſed, and was followed with great loſs of ſtrength. At the time he returned to port, anaſarcous ſwellings, with ſymptoms of general dropſy appeared, which were relieved by æther, opiates, and ſquills. After this he ſunk into a comatoſe ſtate for ſome days, and died without a ſtruggle in the month of March, at Fareham.

In Vice-Admiral Sir Charles Thompſon, the naval ſervice of the country loſt a valuable officer, and ſociety a man of the firſt integrity and worth. But other tributes are due to his memory from the phyſician of the fleet; and whoever giveth to a poor diſciple, is certain of remembrance in our ALBUM. I had been ſurgeon with him in two ſhips, in one of which a general ſickneſs prevailed. This is an occaſion that tries the man and the officer: if the heart is good it here finds exerciſe for ſome of its virtues; for ſurely nothing can be more diſtreſſing than the helpleſs condition of a number of ſick men in a ſhip. The ſervice, I lament to ſay, ſtill denies many comforts; which, if the benevolent and charitable officer does not

afford from his private ſtores, they are not within the command of the ſurgeon. Sir C. Thompſon exemplified this charity on that occaſion, and on all others, with the moſt extenſive liberality. The ſick were uſually helped from his table, before any of his gueſts partook; and medicine produced its genuine effects, becauſe it was aſſiſted by all the reſtorative and exhilirating powers of diet.—If the reader of this paragraph ſhould be an officer, who has accumulated a fortune, by the hardy exertions of brave men under his command, and has never extended a kind look, or an article of comfort to the ſhivering tenants of the Sick Berth, let him think of Sir Charles Thompſon; "*go, and do thou likewiſe.*"

April. My ſtation on board the Atlas not affording me opportunities to viſit the ſick as heretofore, or to communicate with the ſurgeons, I conſidered myſelf now rather as the regiſter of their afflictions, than as the phyſician who ought to relieve them. This thought was tranſmitted where it was ſure of being candidly treated; but my retirement was not deemed expedient.

At this ſeaſon I ſuggeſted that I could be much more uſefully employed at the port of Plymouth, to inſpect the health of the ſhips as they now refitted there. This was approved of; for, I believe, ſome perſons were glad to get quit of me on any terms.

May 7th, I viſited the Saturn of 74 guns, in Cawſand bay. This ſhip arrived in port on the 16th of April, from a ſix weeks cruize, during which time twenty-ſeven ſevere caſes of typhus appeared; of which one man addicted to intoxi-

cation

ation died. The others had either recovered, or were convaleſcent, when the Saturn came to port. The weather was cold for the ſeaſon, with ſharp eaſterly winds.

The fever was not yet ſubdued; from her arrival to the date of my viſit fifty-nine had been ſent to the hoſpital. Nineteen were ſeized on the 6th, and forty-five on the 7th.—Mr. Johnſtone could not trace this fever to any imported infection: indeed there was no reaſon for conjuring up foreign cauſes, there were enough on the ſpot. (Vide Mr. Johnſtone's Report, Art. Contagion.)

Sickneſs at ſtomach, and a peculiar pain of the abdomen, were common attendants of this diſeaſe: but neither diarrhœa, dyſenteric ſymptoms, or conſtipation were obſerved.

A fair trial was at this time made, of Dr. J. C. Smyth's nitrous fumigation, which was entered upon with much belief of its ante-typhoid powers. This was continued in both the Sick Berth and lower deck to the 7th of May; its inefficacy was then thought to be proved, as forty-five people had complained the laſt twenty four hours. At this time I directed that it ſhould be diſcontinued. The caſes, though numerous, were not remarkably ſevere; and had the ſhip not been in great confuſion, by fitting out in a great hurry, many might have been kept on board for cure.

May 12th. No freſh caſes appear of any conſequence. From this period the diſeaſe was conſidered as ſubdued.

The people of the Saturn not being remarkable for cleanlineſs, ſuggeſted to me the neceſſity of having their bedding ſcoured at the hoſpital, as well as their cloathing. I therefore deſired the Captain to inſiſt upon it being done before his men returned on board. This was complied with;

and for the *firſt time*, were infected blankets of ſeamen ſubmitted to the purification of ſoap and water at a naval hoſpital. Who would ſuſpect, that habits ſo unfavourable to health ſhould exiſt in an hoſpital eſtabliſhment; and at a time when moſt of our ſhips hold up ſuch examples of cleanlineſs!—yet the expence of ſcouring a blanket only was three-pence.

May 26th. On this day the French fleet is ſaid to have ſailed from Breſt; and though ſo near as to be diſcerned by the Impetueux, one of the headmoſt ſhips, our fleet could not bring them to action.

June 13th. Lord Bridport came to Cawſand Bay with five ſail of the line; having diſpatched ſixteen ſail of the line to the Mediterranean under Sir A. Gardner.

During this cruize, pulmonic and catarrhal complaints, with rheumatiſm, had been very frequent and obſtinate. Some of theſe caſes required very large bleedings, larger indeed than is uſually done with ſeamen; but the ſhips had not lately encountered much ſevere ſea-duty, and had been well refreſhed with meat and vegetables. The weather was cold for the ſeaſon, and the wind blowing chiefly from the eaſtward.

The Achille, Captain George Murray, ſuffered conſiderably from ſcurvy, being a new ſhip, with a number of raw land-men on board.—On this occaſion the lemon juice, as ſupplied in caſes from the Sick and Hurt Office, required a large quantity to be given to effect the cure; and was probably either ſpoiled by age, adulterated by acetous acid, or diluted with water.

July 11th. Arrived the Mars, Ajax, and Ramillies. Theſe ſhips had been from ten to fourteen weeks at ſea, and ſcurvy had become general in all

all of them; which was quickly corrected by the vegetable ſupplies. Complaints of the lemon juice were alſo made by theſe ſurgeons. A few bottles in each cheſt are obſerved to be muddy from pulp and mucilage, inſtead of being defœcated and pure.

July 13th. Arrived Sir A. Gardner with three ſail of the line, and five of Lord Nelſon's prizes, laſt from the Tagus.

Auguſt 14th. The Renown, Captain Bertie, came to Cawſand Bay, having been fourteen weeks off Rochfort, with a blockading ſquadron: few of her men were without ſymptoms of ſcurvy, being a raw ſhip's company.

The weather, ſince the month of January, had been ſevere and cold, with a great proportion of eaſterly winds; ſcurvy was more general in the channel than had been known ſince the rigid winter of 1794-5; but all the cures *were managed* on board.

Auguſt. Although we have ceaſed to note the whole inſtances which have lately occurred of ſmall-pox being imported, the following is worthy of record. Mr. Allen of the Ramillies, in a late report, mentions a man who died of this diſeaſe at the hoſpital, and gave this account of his being infected: "He was coxſwain to a boat, and was "deſired by one of the young gentlemen to call "at a houſe in dock for a parcel of boots. On "entering the room where there was a child in "ſmall-pox, far advanced in the diſeaſe, he re-"collected in a moment that he never had the "infection; ran out of the room and waited in "the ſtreet until the parcel was brought out to "him. A few days after this he was taken ill. "He was ſent on ſhore the day after the eruption "appeared. We were fortunate in getting clear

"of

" of the contagion; and confirms me in your " opinion, *that the diſeaſe is not contagious at ſo* " *early a ſtage.* One of his meſſmates was very " attentive to him on board, never had the ſmall- " pox, yet he eſcaped by this timely ſeparation as " well as others."

Auguſt 5th. This day died, Admiral Richard Earl Howe, K. G. in the ſeventy-third year of his age: The Father of the Fleet, and the darling of Britiſh ſeamen.

His Lordſhip had never recovered the uſe of his limbs, from the ſevere ſhock he experienced in Torbay in Feb. 1795.—Public opinion has already conſecrated the name of this illuſtrious naval officer; but what pen ſhall do juſtice to thoſe private virtues, that were only known to a ſmall circle. Loyalty, that ſhunned the oſtentation of temporizing politics; integrity, that the emoluments of office could never corrupt; independence, that the power and patronage of ſtation could not bend; humanity, that was extended to the loweſt under his command; a deportment ſo humble, ſo mild, ſo unaſſuming, that it appeared moſt conſpicuous in the hour of victory: to theſe qualities were added, a piety, in the obſervance of religious duties, that gave luſtre to rank, and marked the poſſeſſor as an example worthy of the Britiſh Peerage; as a model for the converſion of the modern Great. Of all men that ever I converſed with, read or heard of, I know of none who ſeemed more fit to die than Earl Howe.

May this country have a race of naval heroes to imitate his virtues!

Auguſt

Auguſt 8th. The combined fleets of France and Spain having eſcaped from the Mediterranean, the Channel fleet was ordered to aſſemble again in Torbay. About this time Lord Keith's fleet of thirty-one ſail of the line returned from the Straits, having chaſed the enemy's fleet into Breſt road. A larger number of ſhips now extended the ſphere of our obſervations, which we ſhall faithfully detail.

Upon inquiry of the different ſurgeons, I find that the ſhips which went to the Mediterranean were leſs afflicted with ſcurvy than thoſe which remained in the Channel, although they left port at the ſame time. Of ſuch conſiderable effect is climate, in accelerating or retarding the approach of ſcurvy when ſalted proviſion is the diet: the ſcurvy indeed is to be conſidered as the *conſtant epidemic* of the Channel.

A Letter from Mr. Burd of the Barfluer, off Breſt, dated the 15th of Auguſt, makes the following remark: "We will require a large proportion of vegetables when we come in; ſeveral "ſcorbutic caſes have appeared within theſe few "days; I imagine in conſequence of the change "of weather, which has been raw and cold, with "drizzling rains; and in the Mediterranean we "had it very dry and ſcorching. I was well aware "we had many prediſpoſed to the diſeaſe, (as "they have had little freſh vegetables for ſome time "paſt,) and only required an exciting cauſe, "which, no doubt, damp, cold weather may be "reckoned; particularly to conſtitutions aſſimilated to a warm and mild temperature."

September 26th. Arrived the Uranie, Captain Towry, having left the fleet at ſea, on account of a general fever in the ſhip. Of this diſeaſe two died before coming to port, and twenty-two have

have been landed. Some of theſe in a dangerous ſtate.

October 5th. To this date, in addition to the number mentioned above, the Uranie has ſent eighteen patients in typhus, but is now conſidered ſafe.

It does not appear that any imported contagion has been ſuſpected as the cauſe of this fever; but it has evidently been aggravated much by bad weather *.

October 6th. Arrived the Captain Sir R. Strahan Bart. from Torbay, having a typhus on board. This ſhip had juſt arrived from ſea with a ſquadron under the command of Sir J. B. Warren; had experienced much bad weather, and was leaky in the upper-works. One man died on board the third day of the fever, and ſome of thoſe landed at the hoſpital are in conſiderable danger; but many with ſlight ſymptoms, from which I infer that the contagion is on the decline.

No imported contagion has been ſuſpected here; but that the fever is of that nature is evident from the perſons firſt taken ill, who were living together; and after them, the attendants of the Sick Berth, and a lad who attended his meſſmate. Early ſeparation, and perfect cleanlineſs, with pure air, ſeem to have checked the diſeaſe in due time. Eighty caſes were ſent on ſhore; and on the 28th of the month the Captain was deemed fit for ſea.

The orlop deck of this ſhip is admirably fitted to prevent the accumulation of impure air, a free circulation being given round the ſtore-rooms, which are kept in the higheſt order poſſible. The decks above exhibit the ſame attention on the part of the officers.

* (*Vide* Mr. Perkins' Report, Art. Contagion.)

With

With a view to keep a check upon the filthy bed-houſes of the hoſpital, the officers of the Captain and Uranie were reminded of making application to have the bedding of their ſeamen ſcoured; and when Mr. Farquhar went by the orders of Sir R. Strahan, he was informed that it was a great expence! ſo reluctantly has this moſt ſalutary proceſs been entered upon; yet blankets were ſcoured for ſixpence per pair.—On viſiting the Captain's people the third day after they were landed, in one of the wards of the ſouth-eaſt wing, I found eleven patients without ſheets to their beds; and on enquiring the cauſe at the nurſe, I was informed that the matron was getting them ready *as faſt as poſſible*. At this time the hoſpital was rather more than one third full!!!

November. The Malignant Ulcer has again made its appearance among us, and the Temeraire of 98 guns has ſuffered conſiderably. The character given by Mr. Lloyd the ſurgeon entirely correſponds with the former accounts: its progreſs was equally rapid; and the cure as difficult as on former occaſions. He ſent a number of the worſt caſes to Haſlar and Plymouth hoſpitals; but his Sick Berth was quickly repleniſhed with ſimilar ſores. The nitrous fumigations were here practiſed, but with no other effect than as uſual neutralizing the ſmell. I cannot help reprobating every attempt of deſtroying bad ſmells by this or any other mock-heroic placebo; for it ſerves to encourage indolence, in waſhing the bed-clothes, &c., and removing the filthy dreſſings of putrid ſores; and hence the conſtant accumulation of every thing that is naſty in ſuch apartments. But if even this is to be obtained, the pipkins muſt be kept conſtantly fuming, to the deſtruction of a great

great quantity of ſalt-petre, *quo graves Perſæ melius perirent.*

The treatment of this ulcer does not accord with the deſcription given; for we are convinced that in its firſt ſtage it is highly inflammatory in its nature. There were twenty caſes in the liſt when Mr. Lloyd left the Temeraire, all of whom recovered under the attentive and ſcientific treatment of Mr. Burd who ſucceeded; ſome of theſe with large exfoliations of bones.

The ſick of the fleet ſuffered ſeverely from having no hoſpital-ſhip during the winter months. Thoſe that were ſent on ſhore at Torbay, were frequently carried to Dartmouth, five miles diſtance, in open carts, there being no hoſpital at Brixham. Others were ſent to Haſlar or Plymouth in different ſhips, under circumſtances that are totally repugnant to our ideas of ſervice. But our voice and opinions could now command no attention. The ſurgeons, at this time, found the common diet on board extremely defective; and in moſt of the ſhips, had it not been for the charity of the officers in beſtowing on the ſick freſh meat and broth, many of the convaleſcents muſt have ſunk under their debilitated ſtate.

The Britiſh and Ruſſian troops that landed in Holland in Auguſt laſt, being obliged to quit that country, embarked in November, after ſuffering incredible hardſhips. Among the Ruſſians in particular, fevers became general, which were followed with great mortality.

The ſummer and autumn of this year were remarkable for the quantity of rain that fell; inſomuch that very little corn was ſaved, and a ſcarcity next to famine was the conſequence.

1800.

About the beginning of February the Edgar came into Cawſand Bay, with ſixty ſick on board; having left the fleet off Uſhant. According to Mr. Fuller's account, a fever made its appearance about the middle of December, and had gradually ſpread to the preſent time. No imported contagion was duly authenticated; the fever was ſuppoſed to be of an inflammatory nature; large bleedings were practiſed in ſome caſes; but in others large quantities of wine were given, apparently on very vague and ſuperficial indications.

The weather, as might be expected from the ſeaſon, was inclement, and the ſhip leaked much in the upper works, the people being conſtantly wet. The caſes which I examined, clearly exhibited the typhoid type of fever; and inſtances were found that diſtinctly marked its contagious diſpoſition. To this period ſix men had died.

Mr. Fuller adds the following remark on the Nitrous Fumigation: "Dr. J. C. Smyth's fumi-
" gation with the *nitrous gas* was repeatedly made
" uſe of in the Sick Berth; but was ſo offenſive
" to the ſick, that it could only be breathed a few
" minutes. It has alſo been carried into its full
" extent; in the decks, and by perſons who had
" good lungs, it was borne, with the tarpaulins over
" the hatch-ways, from eleven pipkins continually
" throwing up a large vapour for two hours."

Before this fever was ſubdued, one hundred and twenty-one patients were ſent from the Edgar to the hoſpital. I examined the few who returned, and found that all the dirty clothes in their bags remained as when ſent on ſhore! Such was the

ſtate of Plymouth hoſpital in March 1800—what a recompenſe for my trouble!

The moſt pleaſing part of this narrative was the charitable attention of Captain Buller to the ſick and convaleſcents; many of whom, in a rigorous ſeaſon, muſt have periſhed but for the large ſupplies from his ſtock of freſh meat, &c. while he lived on ſhip's fare himſelf.

During theſe months a fever of the typhoid kind alſo made its appearance, and extended to nearly twenty caſes on board the Royal Sovereign, the flag ſhip of Sir A. Gardner Bart. The firſt caſe ſoon diſcovered its nature to Dr. Browne, who took due precautions to prevent its progreſs; which was no difficult matter, under the fine arrangements of that highly ordered ſhip.

March 28th. Arrived in Cawſand Bay, the Pompée having on board ſeventy caſes of fever. This diſeaſe appeared about the beginning of the month, but no ſatisfactory account could be obtained of its origin. Like that on board the Edgar, it was ſuppoſed of an inflammatory nature, becauſe coughs and ſtitches reſembling pleuriſy were common, and ſome of the patients ſeem to have ſunk under the uſe of the lancet: eight died previous to this period, and ſix or ſeven at the hoſpital; near two hundred were landed before the diſeaſe could be ſaid to be fairly extinguiſhed.

A large proportion of the caſes ſent from the hoſpital ſuffered relapſes, ſeemingly from the want of a grateful, nouriſhing, and ſtimulant diet, during convaleſcence. Some of theſe were ſent back; but the diſpoſition to relapſe became ſo general, that latterly they were kept on board. A large defection of the Pompée's company happened on this occaſion, partly from a diſlike the men had to return

return to their ſhip, and partly from the facility with which they were entered as objects to be ſurveyed at the hoſpital.

A very intereſting circumſtance took place on the 20th of May, at a general ſurvey at the royal hoſpital, Plymouth, where I judged it proper to attend, on account of a large number of the Edgar and Pompee's people being on the liſt for invaliding. Theſe men had been ſent on ſhore for fever; were now recovered, or convaleſcent; and brought forward for other complaints, or old hurts that never had been known to the ſurgeons of the reſpective ſhips.

On entering the public room, I was accoſted by Captain Creyke the governor, with his uſual acuteneſs, and was aſked by what authority I appeared there. To this I replied, the ſtation I had the honour to hold. This was not deemed ſufficient; he ſaid he could only admit me by an Admiralty order. I then remarked, that the order for ſurvey from the Port Admiral was addreſſed to Captains Stirling, Sawyer, and Pater, who were my officers, and to their opinions I would only ſubmit. The captains very handſomely accepted of my attendance, as they knew I only came there with a view of benefit to ſervice; and as they conſidered it their duty to obtain every evidence that could ſave a ſingle man from being invalided on falſe pretences *. A general ſurvey at an hoſpital has always

* Some time before this rencounter with the governor, in viſiting ſome of the wards, I had dropped ſome angry expreſſions about bitters being put into the wine; which were artfully conſtrued into interference with the medical practice.—Remonſtrances were immediately made to the Admiralty, ſeconded by the Board of Sick and Hurt; and their Lordſhips thought proper to reſtrict my viſits. To this I made no reply, as I expected no ſupport from Lord Bridport. Truſting to this

always been conſidered as a public day; and even on this occaſion every ſurgeon of the fleet was preſent. An Admiralty order directed my future attendance at all ſurveys afterwards.

April 23d.—Arrived the Ruſſel from Torbay, having a typhus fever on board.—This contagion was diſtinctly traced to a man ſent from Plymouth hoſpital, who brought with him his clothes in as dirty a condition as he had carried them on ſhore. [See the able account of the ſurgeon, under the article Typhus.]

April 24th.—This day the captains of the fleet received Admiralty orders to put themſelves under the command of Admiral Earl St. Vincent.

May 8th.—I tranſmitted the account of the ſick meſs on board the Centaur, as eſtabliſhed by Captain Markham, to the Admiralty; and enforced the utility of its general practice throughout the navy, by all the arguments I could produce, as my laſt attempt to ſecure a comfortable diet for the ſick on board.—(Vide the article Diet.)—Mr. Nepean, in return, informed me that he had laid this letter before their Lordſhips.

At this time, and for eight weeks paſt, there has appeared a general diſpoſition to typhus fever

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order of the Admiralty, the governor thought he was empowered to exclude me from the hoſpital altogether. The captains preſent aſſerted their own authority, and the ſervice triumphed. This buſineſs diffuſed general ſatisfaction throughout the fleet. This volume contains facts ſufficient to juſtify a watchful eye over hoſpital eſtabliſhments. The future ſurveys are reported to have been rather meliorated from my attendance. But on this occaſion, had my opinion been taken, the whole of the Edgar's and Pompee's people ſhould have been remanded to their ſhips, without a ſingle queſtion being aſked.

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in moſt ſhips of the fleet. In ſome it has certainly been diſtinctly traced to an imported contagion; but in others we could obtain no evidence that it originated from an infected ſubject labouring under actual fever when he came on board. Draughts of raw landmen are frequently ſent from the guardſhips to fill the deficiencies of complement; and we can often, without doubt, mark the firſt movement of infection; and as this ſo frequently occurs, there is much room left for the ſuſpicion, that in nineteen out of twenty inſtances of general fever, in ſhips, they ought to be traced to this origin.

The tenders employed on the impreſs ſervice, are a conſtant ſource of infection. We have had many occaſions of old, to reprobate the mode of carrying on this duty. But our repreſentations and arguments in this, as well as on many other departments, have been little attended to. The indolence and torpor of office are not to be rouſed by common means: it requires a whirlwind or a peſtilence to ſhake and frighten it from ſecurity.

Captain Kean, of the Chapman armed ſhip, lately brought to Plymouth the ſupernumeraries belonging to a tender which he found in one of the ſmall ports on the Welch coaſt, all of whom were labouring under a ſevere typhus fever. Their condition, as related to me by this officer, who hazarded his own life in the exerciſe of his humanity, is beyond deſcription, and too diſgraceful to be inſerted here. Another occurrence, where infection was generated by cauſes nearly ſimilar, was in the Actæon 44, a guardſhip at Liverpool. The Seagull and Reynard, ſloops of war, were ſent to bring the new-raiſed men to Plymouth. A malignant fever appeared among them, which ſpread through the whole, and extended to the

ſhips' companies of both ſloops, which made them ſend two-thirds of their crews on ſhore. The Actæon, it appears, was furniſhed with what is called a *Preſs Room*, as in the impreſs tenders, for ſecurity, where, it is ſaid, theſe unfortunate victims of contagion were kept.

When we view ſuch occurrences as theſe in ſervice, where raw men are drawn, to be mixed with others, is it not ſomething more than preſumptive evidence, that contagion is always imported into our ſhips? This too is ſtrongly ſupported by the perfect cleanlineſs in the ſhip itſelf, as well as cleanlineſs of perſon in the ſeamen, and pure ventilation throughout the decks. It is a moſt difficult buſineſs ſometimes to ſcrutinize the origin of fever; but we have ſo often ſucceeded, where common obſervers, leſs acquainted, have failed, that we remain ſtrongly impreſſed with the opinion of the general importation of infection. How otherwiſe could we explain it in ſuch well-appointed ſhips, as the Royal George, Royal Sovereign, Achilles, Impetueux, Ruſſel, Cæſar, &c.

This general diſpoſition to typhus, might owe much of its force to peculiarities of ſeaſon; and for theſe we are to look farther back than the few preceding months. The cold ſummer, and large quantity of rain which fell in the autumn, and fall of the year 1799, were univerſally obſerved. To the long continued application of cold, and moiſture in the atmoſphere, operating on the human body, not accuſtomed to ſuch conſtitution and temperature in ſeaſons, we might attribute a great part of thoſe cauſes inducing febrile affections, eſpecially of the low and typhoid type.

Theſe fevers preſerved the character of all other general diſeaſes of this kind; and affected chiefly new-raiſed men, landmen and marines. A typhus

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was carried on board the Canada, by raw men from the Cambridge, who had been ſent from ſome guardſhip or tender to the eaſtward, in the Terpſichore frigate, that had been long in commiſſion. Theſe ſupernumeraries, though badly clothed, dirty, and ſlovenly, did not appear to labour under actual fever, while in the frigate: but that it lurked in their habits, or filthy ſlops and beds, is evident, from the whole falling down afterwards, and tainting the ſhips to which they were diſtributed.

This is a curious fact in the hiſtory of contagion, and exemplified in receiving ſhips every day; that a perſon carries about him the ſeeds of diſeaſe, with impunity, till ſome occaſion calls the infection into activity; ſometimes alſo communicated to another before it affects himſelf.

The ſupernumeraries had ſcarcely left the Terpſichore, when her own crew began to ſicken, of whom ſome died, and numbers were ſent to the hoſpital.

This general diſpoſition to fever in the fleet, according to cuſtom, entirely diſappeared, as the warm and ſettled ſummer weather approached.

The general cry at this ſickly period, throughout the fleet, was an Hoſpital Ship! It was no raſh prediction in me, when the Meduſa was diſmiſſed, that there would ſoon be reaſon to wiſh her back. In the courſe of laſt year the Saturn, Hector, Captain, Edgar, Pompee, Ruſſel, Royal George, Achilles, had been completely diſabled by infection. The five laſt, all ſickly at the ſame time; a force ſo conſiderable as ſometimes enough to decide the fate of a war. Beſides thoſe general infections, other ſhips were partially affected, ſuch as the Royal Sovereign, Neptune, Cæſar, Canada, Atlas, Cumberland, Windſor Caſtle, Magnificent,

&c. Let not therefore any officer boaſt, that he cares nothing about medical arrangements, for as long as ſickneſs and death are the lot of human beings, it belongs to the man, who has the cauſe of his country at heart, to be always prepared againſt contingencies.

May 27th.—The Warrior juſt come from ſea; has in her Sick Berth fourteen caſes of ulcer, all anſwering the character of the malignant ulcer. All attempts at cure have been ineffectual; they were accordingly ſent to Plymouth hoſpital. Here they received no advantage; were brought forward for ſurvey, and ſent again to their wards for cure; were brought forward again—again left to be cured; and, I am ſorry to add, they were invalided at laſt without benefit, and no proſpects of obtaining any.

This diſeaſe, it appeared, made no alarming progreſs in the Warrior: and had it been infectious, muſt have affected greater numbers, for no ſeparation was inculcated beyond moving the patients to the Sick Berth.

May ——.—The following report comes from the correct and intelligent Surgeon of the Boadicea:

" The Boadicea having been more than eleven " weeks at ſea, employed in watching the mo- " tions of the enemy, in the port of Breſt, re- " turned this day to Plymouth Sound to refit.

" During a long continuance of the eaſterly " winds in the middle of March, a kind of Influ- " enza made its appearance, attacking the patients " ſuddenly, with ſlight fever, and the ſymptoms " conſtituting *coryza* and *gravedo*. The inflam- " mation rarely extended to the breaſt; and the " diſeaſe, in general, yielded in a few days to the " uſual remedies.

" Two

" Two cases of severe pulmonic affection, (both " now in a state of slow convalescence, and re- " quiring a nourishing light diet,) are proposed as " objects for the hospital; together with a case of " sinous ulcer in the leg, arising from a severe " contused wound, and a relaxed scorbutic habit.

" The fevers were slight, arising either from " careless exposure to cold, or irregularity.

" The venereal complaints (eleven) are all cur- " ed: two buboes unavoidably suppurated, and se- " veral were repelled.

" A scorbutic taint is the only prevalent dis- " ease; and, as usual, retards the cure of every " complaint; and the treatment of every ulcer " has of late been difficult. The lemon juice has " been used in considerable quantity; and I was " obliged to procure a supply from the Mars, pre- " vious to the ship being ordered into port.

" May 17th. (Signed)

" B. F. OUTRAM, Surgeon."

The following order was issued from the Ville de Paris at sea:——

May 4th, 1800.

" Mem°.

" It is my directions, that there are no sick " in future to be sent to the hospital at Ply- " mouth, from his Majesty's ships and vessels " under my command, without the authority of " Dr. Trotter, physician to the fleet, who will " visit the ships whenever a boat shall be sent to " him for that purpose *.

* An order of this kind was given by Earl Howe in 1794.

" The reſpective Captains are to report to me, " if, at any time, clothes or neceſſaries ſhall be " ſent from the hoſpital, with recovered men, " uncleaned.

" The Surgeons of the ſquadron are to ſend to " Dr. Trotter a monthly ſtate of the ſick, from " the 22d of April, 1800.

" (Signed) ST. VINCENT."

This order was the revival of medical diſcipline in the fleet; and reſtored my duties to the ſick. But I received no intimation that an hoſpital ſhip ſhould be fitted, which had before beſtowed ſuch unſpeakable comforts to the Sick Berth.

The order for the ſurgeons to furniſh regular reports, put it in my power to call upon them whenever a deſire might be diſcovered for with-holding them, which was not frequently the caſe.

May 18th.—A ſevere gale of weſterly wind forced the fleet to put into Torbay; two ſloops of war are ſuppoſed to have foundered in it.

May 24th.—The fleet ſailed from Torbay.

On conſideration of the active duty of the ſhips that had cruized under Sir A. Gardner, all the winter, I repreſented to Earl St. Vincent the probable appearance of a prevailing ſcurvy; and my ideas on the prevention, from my experience and obſervations on the ſeaſons and weather of the Channel. My opinion ſeemed to be treated with reſpect; and the fleet was informed, by his Lordſhip's order, concerning the ſupply of vegetables, when arriving in port, as correctors of ſcurvy.

June 30th.—Arrived the Temeraire, over-run with ſcurvy. R. A. Whitſhed deſired me to report to him, in writing, the condition of his people; I therefore recommended a fortnight's allowance of freſh beef and vegetables, agreeable to the the general practice in the fleet, to eradicate the diſeaſe.

It appears that orders had been given, that no ſhip going to port, ſhould be detained longer than ſix days. Unknown to me, a large ſupply of lemon juice was iſſued to every ſhip, as a preventive of ſcurvy, and ordered to be mixed with ſugar and water, as lemonade. Before I was informed of this circumſtance, I had recommended a ſufficiency of freſh beef and vegetables to the Superb, which arrived a few days after. The Rear Admiral, who beheld this diſeaſe ſo general with great concern, I ſuppoſe, incloſed my Report to the Commander in Chief.

The Temeraire had at this time a few caſes remaining of the malignant ulcer with diſeaſed bone. A number equally affected, whom I inſpected, had been cured on board by Mr. Burd, and were now doing duty. Theſe caſes, though likely to be tedious, were progreſſive in cure; they were ſent on ſhore, but received no benefit, and were brought forward for invaliding. Mr. Burd, on this occaſion, obſerved, that his abilities and aſſiduity would have availed but little, had his patients, in their debilitated ſtate, not been largely provided with freſh mutton, excellent port wine, porter, &c. from the table of the Admiral and wardroom.

July.—Sometime in this month, I was honoured with the following laconic epiſtle.

" Sir,

" Sir, Ville De Paris, off Uſhant, July 13th.

" I very much diſapprove your officious interference, to prevent His Majeſty's ſhips under my command from putting to ſea, the moment their beer, water, and proviſions are completed, which is ordered to be done with the utmoſt poſſible diſpatch; and I deſire you will diſcontinue this practice.

" (Signed) ST. VINCENT.

" To Dr. TROTTER."

On firſt peruſing this letter I was rather at a loſs to conjecture what it alluded to; but ſuſpected that it muſt relate to reports given by order of R. A. Whitſhed, on the prevailing ſcurvy in the Temeraire and Superb, mentioned above.

On ſhowing it to ſome of my friends in the fleet, they adviſed me to reply. To this I anſwered No: the temper that could dictate ſuch a letter to a phyſician in the exerciſe of the beſt affections of the human heart, could not be ſatisfied with explanation. On ſuch an occaſion, if the medical character poſſeſſes any virtue within itſelf, to that he muſt fly for ſanctuary; and let the ſtorm rage that he cannot appeaſe.

It need ſcarcely to be mentioned, that this letter is incorrect in point of ſervice, for a medical officer has no power to detain a ſhip. I acted in compliance with the order of the ſenior officer on the ſpot. But although my report preſcribed a fortnight's allowance of freſh meat and vegetables to theſe ſcorbutic crews, it did not imply that they ſhould

ſhould be detained a ſingle hour in port: on the contrary, a month's vegetables, in ſimilar conditions of ſcurvy, have often been carried to ſea.

The harſh terms of this letter, I muſt confeſs, wounded me grievouſly. I became tired of a ſtation that expoſed me to unmerited ſuffering. I had lately diſpleaſed one Commander in Chief by claiming protection from inſult; and a ſecond was now reproaching me while fulfilling the duties of my office.

Ever ſince the general ſcurvy of 1795, a ſtore of lemon juice had been ſupplied to every ſhip; and all caſes of ſcurvy had been cured on board. But notwithſtanding, we ſtill looked for recent vegetables by way of prevention. In a warm climate the acid fruits are grateful ingredients in diet, and to theſe countries nature has confined their growth. In the cold ſeaſons of the Channel, however, the native acid is unnatural: we carry it to ſea from neceſſity: it cures ſcurvy, and preſerves human life; but at the ſame time it weakens the digeſtive powers, conſumes the fat, and leſſens muſcular vigour. By theſe means, that ſtrength of body is impaired, that can alone contend againſt the tempeſtuous weather to which the home ſeas are liable for eight months out of the twelve. I conceive alſo, that the vigour and activity of a ſhip's company ought to be hoarded up, as it were, for grand occaſions; that they may wield a heavy artillery with effect on meeting with an enemy. Theſe facts are poſitive and deciſive. When they come to be otherwiſe, the laws of Nature, which govern the ſeaſons in our hemiſphere, muſt change: and a new *Archæus* muſt adminiſter new principles and movements, to regulate the ſyſtem of animated creation. I was aware

aware that much activity would be infuſed into the operations of the Channel, and for that very purpoſe wiſhed the ſhips to be recruited with real not merely apparent health.—It will not be wondered at, if after this tranſaction I reſolved to trouble his Lordſhip no further with my correſpondence: in this I was the more ſorry, as I had cheriſhed the hope, from his known diſcernment, to have purſued thoſe plans of improvement in the medical department, which were left unfiniſhed through the indiſpoſition and retirement of Admiral Earl Howe.

July 10th. A caſe of inveterate ſcurvy was this week ſucceſsfully treated, on board the Superb, by the concrete acid of lemons, as prepared by Mr. Coxwell of Temple Bar, after the manner of Scheele *. The caſe, which was attended by Mr. Watherſton, is detailed at full length under the article Scurvy, which ſee. As this caſe was uncommonly ſevere, and every thing guarded againſt that could deceive us, in juſtice to public ſervice, I addreſſed the Lords Commiſſioners of Admiralty, and requeſted a ſupply for the fleet.

This concrete form of the citric acid would appear to be the laſt *deſideratum* at ſea for the cure of ſcurvy; as it will keep for many years, and is unaffected by the air, and eaſily portable. But I can already ſee that the naval ſervice is not likely to be ſoon benefited by this ingenious diſcovery. There is a *worm* that cankers the bud of all improvement here!

* *Vide* Crell's Journal for 1784.

Lord

Lord St. Vincent has directed the Sick Berths to be enlarged, and more commodiouſly fitted for the ſick. What a pity he did not point out the Berth of the Centaur for a model.

Auguſt. Freſh *vegetables* are now ſent to ſea with every ſhip for the uſe of the fleet; but it does not appear that any *live ſtock* have yet been ordered.

All the ſhips which have lately arrived have much ſcurvy. In thoſe caſes where it has appeared the ounce of lemon juice, and the ounce of ſugar mixed with water, which is Lord St. Vincent's *formula*, do not ſeem to have checked its progreſs. A multitude of caſes ſtill occur, in which the ſurgeons are under the neceſſity of giving from ſix to eight ounces daily, in the uſual manner, to effect a cure.—The people in the Windſor Caſtle are evidently much emaciated by its uſe.

Mr. Burd of the Temeraire, in his laſt report from ſea remarks: "In conſequence of the recruit "which the ſhip's company had in harbour, the "general tendency to ſcurvy has diſappeared. "But it is ſtill very marked, in many of thoſe who "were worſt previous to our going into port; "though even with them ſince coming to ſea, "by the uſe of lemon juice we gain ground. "And I beg to remark, that their ſtrength ſome-"what fails under its uſe; and emaciation of "body is perceptible to the moſt inattentive "obſerver."

Auguſt 4th. Ten caſes of the old ulcer appear ſtill on board the Terrible: they ſeem to gain no ground by their preſent treatment.——The ſhip

ſailed

ſailed on the ſame day as a reinforcement for the North Sea.—The ſcurvy is alſo prevailing in this ſhip, having been long at ſea.

The ſmall-pox during the preſent cruize, have appeared in the Cumberland and Gibraltar; in the former ſhip five have died.—Theſe events urged me to renew my application to the Admiralty, in behalf of the vaccine inoculation, which had now triumphed over all detraction and oppoſition: I therefore wrote to Mr. Nepean in the following terms:

Sir, Plymouth, Auguſt 14, 1800.

In addition to the former occurrences of ſmall-pox in the ſhips of the fleet, which at different times I have had the honour to mention to their Lordſhips, I am ſorry to relate, that they have appeared lately at ſea on board the Cumberland and Gibraltar; and in the former five men have died of that diſeaſe.

Their Lordſhips have probably now had ſome information of the ſucceſsful progreſs of the inoculation for the vaccine diſeaſe, as an effectual ſecurity againſt ſmall-pox. This practice has been ſo deſervedly ſupported by the firſt medical characters, and promiſes ſo much benefit to ſociety at large, that it now becomes my duty to requeſt permiſſion from their Lordſhips to introduce it into the ſhips of the fleet, as they ſucceſſively arrive in this port.

Some thouſands of caſes have been inoculated in this neighbourhood with the happieſt iſſue. The vaccine diſeaſe can only be communicated by inoculation; is not infectious by other means; does not confine the patient by febrile indiſpoſition, and may be ſafely tried in all ſituations of naval duty.

To ſeamen in public ſervice it therefore holds out pre-eminent advantages *.

I have the hunour to be, &c.

To Evan Nepean, Eſq.

The anſwer of Mr. Nepean to this letter informed me, that in conſequence of a Report on the ſubject from the Commiſſioners of Sick and Hurt, their Lordſhips had ordered a trial to be made on board the Triumph, then refitting at Portſmouth.

The buſineſs was thus taken out of my hands. There ſeems indeed of late, ſome diſtruſt to have been entertained at every propoſal that I made for the public good. And in a few months I had to regret the tardy proſecution of the new inoculation, and its total decline in the fleet, without having done one-tenth of the benefit that might have been accompliſhed. I had prepared an addreſs, on purpoſe to ſubdue the ſuperſtition and ignorance of the ſeamen; and from my official and perſonal influence among them, could not have failed to conduct it with effect.

Mr. Toſh, the ſurgeon of the Triumph, in his department, proſecuted the practice with due ſucceſs; none of his people being objects for the Sick Liſt during the cure.

The Ville De Paris, while refitting at Portſmouth, imported the variolous infection, for which twelve caſes were ſent to Haſlar hoſpital. Dr. Felix, who at this time was ſurgeon, mentions

* This practice was propoſed in my former Volume.

upwards

upwards of two hundred men in that ſhip who never had the ſmall-pox.

The following Letter, on the police of naval ſea-ports, is ſo nearly connected with a preventive ſyſtem of medicine, that it appears neceſſary to give it a place here; that our ſucceſſors may know the channel for obtaining redreſs, whenever public ſervice falls under a ſimilar predicament.

" Sir, Plymouth Dock, Auguſt 18, 1800.

" Although the ſubject of this letter may in ſome reſpects be deemed foreign to the department of medicine; yet, as connected with it in others, in the general plan of preſerving health in the fleet; I ſhall hope to be forgiven as an executive medical officer in requeſting the attention of their Lordſhips to what may be conceived of more importance to naval ſervice, than any thing which I have had the honour, for a length of time, to ſubmit to their deliberation.

" Since the ſhips of the fleet have chiefly refitted at the Weſtern ports; and the pay as well as prize-money of the whole have been paid at Plymouth, an unuſual influx of money has of courſe taken place in theſe towns; but eſpecially at Plymouth Dock. Where ſo large a number of ſeamen, from the increaſed number of ſhips in the fleet, have occaſion to ſpend their wages, thoſe tumults and exceſſes, the common offspring of their irregularities, when unreſtrained by diſcipline, have multiplied in proportion. Sudden death, in many inſtances, has been the conſequence; health has

has ſuffered in the whole; and every vicious propenſity has been encouraged. The inhabitants of this place, in order to avail themſelves fully of the rich harveſt which the profuſion of the ſeamen is daily holding forth, have, by intereſt and addreſs, with the neighbouring magiſtrates, opened, within theſe eight months, not leſs than one hundred and forty *additional* public houſes in the town of Dock only! Each of theſe taverns may be conſidered as the haunts of ſo many *dæmons*, that are dooming the deſtruction of our people; as ſo many *volcanos* that are pouring forth the blaſts of death and diſeaſe! A certain number of houſes have, by the ſtrong graſp of avarice, been pitched upon for the purpoſe of gin ſhops; and if the preſent inhabitant did not chuſe to take out the licence for vending liquors, he was turned out of doors, and his houſe made over to ſomebody elſe. If ſuch is the prevailing practice, their Lordſhips muſt be aware into what dangerous ſociety the heedleſs and improvident ſeamen may be decoyed. In reſorts of this deſcription the general mutiny of 1797 was firſt planned: there the Iriſh catholic prieſts took up their abode, when they ſwore in the United Iriſhmen of the fleet to extirpate every proteſtant in our ſhips; and there alſo the crimps are concealed, that delude and perſuade our ſeamen to deſertion. Such is the degraded ſtate of police of this town containing upwards of 25,000 inhabitants!

It is by no means my intention, in this letter, to abridge the pleaſures of the ſeamen; but I am humbly of opinion that much might be done to reſtrain their exceſſes, to meliorate their moral character, and to guard them againſt impoſition; which would redound to the public benefit. From my general intercourſe with every officer and ſhip,

more of this buſineſs comes under my obſervation than that of any other perſon whatever. There is ſcarcely a day that I walk from my lodgings to the boat, but ſome of the horrors that I am now reprobating fall under my view. In thoſe conflicts, which during a ſtate of ebriety the ſeamen have among themſelves ſo frequently in the ſtreets, nothing can exceed the ſavage apathy with which they are beheld by the inhabitants, who value them only as the dupes of extortion; and look on, while they half-murder one another, with ferocious pleaſure.

What I would venture to recommend on this ſubject, is a total change in the adminiſtration of the police, and to be conducted after the model of Weſtminſter. No perſon would then be permitted to open a public houſe but people of unexceptionable character; and conſtables or other officers might be ſo arranged to patrole the ſtreets, as to prevent riot and diſorder. The ſeaman would thus learn to ſpend his wages with decency, and return in due time to his ſhip, without endangering his health or his life, by continued intoxication.

A police of this deſcription, under reſpectable magiſtrates, would introduce a new *æra* into naval ſervice: would be a moſt effectual check, and tend to extinguiſh that licentious ſpirit that has gone abroad among our ſeamen; and which runs much hazard of being renewed with freſh horrors in the event of paying off the ſhips at a general peace.—I have the honour to be, &c.

To Evan Nepean, Eſq.

The contents of this letter received due attention from the Admiralty: a copy of it was ſent to the Duke

Duke of Portland, one of his Majeſty's Principal Secretaries of State, with a requeſt from their Lordſhips, that his Grace would take ſuch ſteps as would correct the evil of which the phyſician ſo emphatically complained.

The weather towards the end of July became exceedingly hot; the thermometer frequently riſing in the ſhade to 78 and 80. Scarce a ſhower had fallen for ten weeks; the ground was every where much parched; the harveſt early, and the corn good though not very abundant.

On the 20th of Auguſt, at midnight, commenced a moſt tremendous thunder ſtorm: attended with more vivid lightning than uſually ſeen in England: heavy rain fell with it; the air became very cool immediately after, to which ſucceeded cold northerly winds.

The Renard, Captain Spicer, with another ſloop, has again come from Liverpool with new-raiſed men. Notwithſtanding the diſtreſs that had happened before, men labouring under infectious fevers were ſtill found in the guardſhip in the river Merſey. With a view of ſaving his people from ſurrounding diſeaſe, Captain Spicer very properly called in the eminent advice of Dr. Currie, who pointed out fifteen men labouring under different degrees of typhus. Yet, after all precautions, ſome caſes appeared on the paſſage, which from neceſſity were ſent to Plymouth hoſpital. Had the weather at this time been tempeſtuous, or had

it been at another ſeaſon of the year, theſe veſſels might have ſuffered a-freſh, and infection followed wherever the raw men were diſpoſed of.

Dr. Currie, with the other medical adviſers, very juſtly remarked, that veſſels of this ſize and conſtruction are extremely ill adapted for the accommodation of an extra compliment of ſupernumeraries.——How much more conducive to health would be the employment of troop-ſhips for this duty? (*Vide* Article Contagion.)

Auguſt 20th. Monday: this day Admiral Sir Alan Gardner, Bart. ſtruck his flag; being the laſt flag-officer who ſerved in the fleet, on the firſt of June 1794, under the command of Earl Howe.

In conſequence of very juſt complaints made by the ſurgeon of the Ville de Paris to Earl St. Vincent at Torbay, in May laſt, his Lordſhip was pleaſed to make repreſentation to the Admiralty, on the neceſſity of fitting ſome hoſpital for the accommodation of the ſick. At the Sick Quarters of Dartmouth, men in fevers were found lying two and two in a bed! While an hoſpital-ſhip was attached to the fleet, there ſeemed no want of a Sick Quarters at Torbay: but the former Commander in Chief, having ſuggeſted the diſmiſſion of that ſhip, it is rather unkind to perceive the Channel fleet ſo ill provided, as appears from this complaint. A Commiſſioner of Sick and Hurt was therefore ordered to Torbay to inſpect thoſe ghaſtly retreats of ſickneſs; and a large dwelling-houſe

houſe near the beach was directed to be fitted up immediately for the reception of our people!

Auguſt 27th. Mr. M'Laughlin of the Achille, mentions a number of opthalmias having appeared in that ſhip, during a long continuance of eaſterly winds in July; ſimilar to what is related by Mr. Riley in Vol. II. Theſe complaints, attended in ſome caſes with a conſiderable degree of fever, were frequent in other ſhips; declined as the wind ſhifted to the weſtward, and would return as it veered again to the Eaſt.

Auguſt 29th. The St. George of 98 guns, juſt arrived from a fourteen weeks' cruize, has ſuffered ſeverely from ſcurvy; and the people are evidently much emaciated from the uſe of lemon juice; there are in the Sick Berth ſome caſes of dyſpepſia from this cauſe.

Mr. Johnſton of the Atlas, in his laſt Report, mentions not leſs than one hundred caſes of ſcurvy having occurred laſt month; but only two were put into the Sick Liſt; though the whole take lemon juice for the cure. It thus appears that an ounce of lemon juice and an ounce of ſugar do not, even in this fineſt ſeaſon that ever was known in the Channel, ſuſpend the progreſs of ſcurvy.

Mr. Burd of the Temeraire gives the ſame teſtimony. He ſays, "there was little appearance of "ſcurvy laſt month, until theſe few days paſt; "and ſymptoms of it are again making their "appearance." Caſes alſo appear in the Defence, and moſt other ſhips, for none of them were duly recruited when laſt in port.

Mr. Hartthorne of the Edgar, one of the advanced ſquadron at anchor off Breſt, ſays, "many

" take lemon juice for the cure of ſcurvy and get " well; but our people are grievouſly fatigued with " hard duty." It is to be remembered, this ſhip, in the ſpring, ſuffered from a general fever.——The Neptune has had ſome ſevere caſes of ſcurvy laſt month, to the number of twelve unfit for duty, as appears from Mr. Grant's Report.

Auguſt 31. Arrived the Bellona after fourteen weeks' cruize ingood health, but like the St. George, emaciated people, and in want of refreſhments.

The Marlborough, one of the advanced ſquadron off Breſt, has general ſcurvy, according to Mr. Hughes, but ſlight in moſt caſes; and but ſeven in the courſe of the month unfit for duty.

Large ſupplies of vegetables are ordered to be prepared for the fleet, by different agents of the Sick and Hurt Board. The lemon juice, in the quantity as made into lemonade, does not ſeem, in this fine weather, even to prevent ſcurvy.

Mr. M'Grath in his laſt Report mentions a typhus fever again raging in the Ruſſel; ſixty-ſix having been taken ill laſt month, of whom one died. It is however probable, from the people's good ſtate of health after the extinction of the former diſeaſe, that a freſh infection has been imported. (See his Report.)

September. The Commander in Chief has very juſtly pointed out to the Board of Sick and Wounded, their inattention to the appointments of ſurgeons' mates. For two or three years paſt the greater part of the ſhips of the line have had only one mate, ſometimes very indifferently educated, while moſt of the frigates in the Channel have had two.

Liberal

Liberal ſupplies of cabbages, onions, turnips, and carrots are now ſent to ſea, from the port of Portſmouth as well as Plymouth, and the health and ſtrength of the fleet have now a chance of being recruited before the commencement of winter.

September 13th. The Captain, juſt arrived, has been fifteen weeks at ſea, and ſends ten people on ſhore, five of the number in the laſt ſtage of debility, though without any generic diſeaſe: ſuch are the effects of long channel cruizes.

The want of an hoſpital-ſhip is ſtill more and more apparent: caſes of phthiſis, of dyſpepſia, and other ſpaſmodic affections are unuſually numerous and ſevere. A large proportion, under the advanced ſtages of chronic diſeaſe, ſeem paſt medical aid, that would have received certain relief had they been more early moved on ſhore.

It is reported, that at this time a great number of French priſoners on board the priſon-ſhips in Homaoze are afflicted with ſcurvy. Yet the ſeaſon has been favourable for correcting this tendency. Their ration of proviſions is ſmall; and the diſeaſe had probably been contracted at ſea, and aſſiſted by impure air in their preſent crowded apartments.

September 18th. The Edgar, juſt arrived, has a few objects for the hoſpital; little ſcurvy, but

the ſhip's company is much weakened, and need recruit.

The Royal George is in good health at this time, the fever having ceaſed for ſome months.—Like the other ſhips, refreſhments are here much wanted. The Canada, juſt arrived, is much in the ſame condition.

Mr. M'Grath juſt relates the diſappearance of the typhus fever of the Ruſſel, with an account of his ſucceſsful practice of the affuſion of *cold water*, according to the learned Dr. Currie's plan. (See Contagion.)

September 22d. Mr. Adamſon of the Doris, juſt arrived from a four months' cruize, gives a moſt favourable report of the concrete citric acid. (*Vide* Art. Scurvy.)

September 26th. The fleet put into Torbay from a ſevere gale of wind. The weather had been fine till this time.

It is ſaid, that the Commander in Chief had juſt reaſons for finding fault with the petty accommodations of the ſick at Torbay, on his return from ſea. The whole plan, indeed, as well as its ſpirit, is an epitome. It is like reducing old Drury to the Theſpian cart. There was even a neceſſity for ſending joiners and carpenters from the ſhips to accelerate the building.——When I look round and ſee the ſtately and ſplendid edifices riſing every where for the uſe of the army, my heart bleeds for the neglected navy.

September 26th. Arrived eight ſhips of the line. The good effects of the large ſupplies of vegetables lately ſent out, are evident in the whole, and the ſtrength of the men much reſtored. A number of conſumptive caſes appear in the Sick Berths in the laſt ſtage; and in the ſame diſeaſe more

more deaths have happened at ſea than is uſual in the Channel in the ſummer months.

The Excellent was ordered in, as reported, for what was called an Influenza. But nothing was found on board, except a general attack of ſlight catarrhal ſymptoms, with headach; which readily yelded to trifling remedies.

The ſhips at this anchorage have juſt received the following order:

General Memorandum. Temeraire, 26th Sept. 1800.

The Commiſſioners of Sick and Wounded ſeamen having reported to the Lords Commiſſioners of the Admiralty the favourable effects of the vaccine inoculation, their Lordſhips have been pleaſed to direct, that thoſe ſeamen who are deſirous thereof are to be inoculated.

It is therefore the Commander in Chief's directions, that you order the reſpective ſurgeons to inoculate any of the ſeamen who are deſirous of it accordingly *.

(Signed) J. H. WHITSHED.

To the reſpective Captains, &c.

Thus, theſe phyſicians have at laſt condeſcended to give an opinion on this popular practice: excellent humaniſts! There is ſcarcely a village in Great Britain that has not long ſhared of its bleſſings; and ſix months ago the Government of France

* We thus obſerve, that no admonitions or explanations were employed to perſuade the ignorant ſeamen to embrace this ſalutary practice: alas! they knew not its value.

borrowed

borrowed a Britiſh phyſician, Dr. Woodville of the Small-Pox Hoſpital, to introduce it into Paris!

At this time the Board of Sick and Wounded ſent to the Royal Hoſpital at Plymouth a few lancets armed with *vaccine* matter, with directions, that if theſe ſhould fail in communicating the diſeaſe, the medical ſtaff of the hoſpital ſhould ſend by the coach to London, *two children* to bring down the infection to the fleet. Would it not have been preferable to ſend a Glouceſterſhire cow, as propoſed in my ſecond Volume? Before this time one thouſand children had been inoculated in the vicinity of Plymouth for the vaccine diſeaſe, at which port out ſhips refitted.

Mr. M'Grath of the Ruſſel gives a favourable report of *arg. nitrat.* in a caſe of epilepſy, that reduced the frequency of the fits, from ſeveral times in the day, to once a-week.

28th. Catarrhal affections that prevailed in the Namur laſt month, according to Mr. Walker's Report, have now diſappeared; the uſual effect of variable channel weather. A conſiderable degree of ſcurvy has alſo appeared in this ſhip during ſeventeen weeks at ſea.

Mr. R. Thompſon of the Childers, gives the following account of a trial of Coxwell's elegant concrete citric acid. "I beg leave to obſerve, "that I have made trial of the chryſtallized lemon "juice, (during a ten weeks' cruize,) which you "were ſo condeſcending to recommend; and I "have the pleaſure to ſay, that I found it to an- "ſwer all the purpoſes of the freſh fruit."

Catarrhal complaints have been common in ſeveral ſhips, at the late change from dry to wet weather;

weather; the uſual conſequence of the variable Channel climate; but this effect has been partial, and the ſymptoms ſpeedily yielded to a night's reſt, or trifling remedies. Some of the ſurgeons, on very ſlender foundation, have called this complaint by the unſcientific appellation of Influenza; while the greater part have retained the generic term Slight Catarrh.

From the meagre and emaciated figures which the ſick of the ſhips now exhibit, after theſe long cruizes, I have again been induced to make application for ſupplies of freſh meat to the Sick Berths at ſea. Perſeverance has done much in ſome of my former labours, but in this I have been hitherto completely foiled.

Strong prejudices having been ſpread abroad concerning the danger of adulterating the concrete acid of lemons, I have been under the neceſſity of repreſenting the futility of ſuch ſurmiſes to the Admiralty; for from the nature of its preparation it is impracticable without being eaſily detected.

Mr. Willes of the Centaur mentions a fever of the low typhoid type appearing in the Centaur off Breſt; but no deaths happened, and it has diſappeared. In this ſituation great advantage was obtained from a large ſtock of freſh mutton, porter, &c. with which the Sick Berth of this ſhip is furniſhed at the expence of the people themſelves. (Vide Article Diet.)

A letter from Mr. Toſh of the Triumph announces the perfect recovery of four caſes of the inoculated

inoculated *vaccine diſeaſe* on board of that ſhip; and that the ſucceſs of this had mad emany of the ſeamen candidates for the inoculation. This forms a new æra in the navy. (Vide Variola Vacciola.)

Some caſes of ulcer in the Warrior have lately proved fatal.

October 10th. Arrived the Renown, London, Impetueux, and Courageux, under Sir J. B. Warren; theſe ſhips attended the unfortunate expedition at Ferrol, and have been abſent nineteen weeks. The ſcurvy has been kept under by ſome refreſhments obtained at Oporto, and lemon juice; but the people are in much need of freſh meat and vegetables. A few caſes of ulcer, rather obſtinate, appear in the Renown, the effects of debilitated conſtitutions.

Mr. Lloyd, ſurgeon of the Renown, in this long cruize made trial of the concrete citric acid in the cure of ſcurvy, and gives it the ſame commendations as beſtowed upon it by every other ſurgeon.

October 12th. The fleet ſailed from Torbay.—

A much larger proportion of phthiſical caſes have appeared lately among the ſeamen, than was ever obſerved in the Channel. Probably the lemon juice has done harm. But the haraſſing duty and long cruizes muſt produce debility in extreme.

Yet none of theſe caſes exhibited the florid conſumption; the countenance was always pale or ſallow. Might not a long uſe of vegetable acid excite a latent ſcrophulous diſpoſition in the lungs or meſentery, and produce ulceration, emaciation, &c. ?

The

The following order from the Commander in Chief ſeems to allude to the prevailing conſumptions.

Ville de Paris, at ſea,
" General Mem. Oct. 13th, 1800.

" Confident as the Commander in Chief is, that " many conſumptive caſes might be prevented, " and others mitigated by timely application of " flannel next the ſkin, in catarrhs, coughs, and " common colds; he moſt ſeriouſly exhorts the " captains of the ſhips compoſing the fleet under " his command, to inculcate this doctrine in the " minds of their ſurgeons; who, from *caprice* and " *perverſe oppoſition* to every wholeſome regula- " tion, groſsly neglect this important duty.

" The moment any patient is deſcribed on the " ſick liſt, as labouring under the abovementioned " complaints, the Captains are required to enforce " the wearing of flannel ſhirts or waiſtcoats next " the ſkin; and to ſee that the purſers are always " provided with adequate ſlops for this purpoſe.

" (Signed) ST. VINCENT."

It is plain from the nature of this order, that ſome accuſing ſpirit has been at work.—From direct application of the medical officers to Earl Howe, theſe articles became a part of naval cloathing in the ſevere weather of January and February 1795. At that rigorous ſeaſon Lady Howe kindly preſented a ſuit of flannel to every man on board the Queen Charlotte. All the ſurgeons of whom I have made inquiry, are in the conſtant practice of attending to the cloathing of the ſick at all times. In theſe pages are proofs ſufficient to reſcue them from the imputation of

neglect.

neglect. Had his Lordſhip inquired a little further, he would probably have learned from their officers, that they are a reſpectable body of profeſſional men; faithful and humane in the diſcharge of their office; and earning the humble pittance which they receive from their country, with as much integrity as any claſs of men whatever. Men that had received a ſhare of polite, as well as a medical education, could not but be deeply wounded with the language of this order.

The very practice which his Lordſhip here inculcates, carries with it its own confutation. Only think of the condition of a ſeaman at hard labour, being drenched in perſpiration with flannel next his ſkin: he has no wardrobe to ſhift himſelf, and if he does not ſhift he is no better than a walking ſtink-pot. It will be the ſame if he ſleeps in bed with this flannel on: the practice is filthy and unwholeſome. What conſumes ſo much perfumery in the preſent day? it is the beau ſwaddled in flannel to cover the indelicate ſmell of his own atmoſphere. If Britiſh ſeamen are to wear flannel next their ſkins, they are not ſubjects for a ſhip; they muſt ſoon loſe the hardihood of conſtitution that fits them for their duty. Clothe them as warm as you pleaſe, but in the name of cleanlineſs give them linen or cotton next the ſkin. Read our hiſtory of phthiſis, and judge whether flannel could have counteracted its cauſes.

Mr. Grey of La Nymphe, while off Cape Finiſterre laſt September, remarks, "Six men were "ſuddenly ſeized with cholera. The weather till "this time had been exceſſively hot and dry, and "now became rainy. They were attacked with "moſt

" moſt ſevere griping, vomiting, purging, and " ſpaſms of the muſcles of the thighs and legs. " In one patient, ſhivering, pale countenance, " and great proſtration of ſtrength took place at " the beginning of the diſeaſe.

" The abdomen, thighs, and legs were well " fomented, and large doſes of opium immediately " given; which, in general, relieved the patient " in the courſe of an hour, and procured ſleep; " on awaking from which, he felt himſelf free " from all the ſymptoms, except ſlight ſpaſmodic " twitches of the muſcles of the legs; which " continued to recur occaſionally for a few days. " Small doſes of opium and cinchona were given " till they went entirely off."

The exceſſive hot weather of the ſummer, with a ſudden change to a low temperature, affected a number of men with cholera, in different ſhips. When treated in the manner of Mr. Grey, they ſoon got well.—But our moſt general diſeaſes are complaints of the pulmonic or catarrhal kind.

October 27th. The fleet anchored in Torbay.

The Jennerian inoculation goes on ſucceſsfully, in the hands of Mr. Bellamy of the Spencer.

A caſe of ſmall-pox has juſt appeared in the Superb. Mr. Watherſton has therefore carried vaccine matter to ſea, the ſeamen having aſſured me they would moſt willingly ſubmit to it.—Mr. Dunning of Plymouth Dock, the ingenious writer on this diſeaſe, and diſciple of Jenner, kindly ſupplies our ſurgeons with recent vaccine matter from his numerous patients.

The weather for the laſt three weeks has been fine indeed for the ſeaſon.

From the long prevalence of weſterly winds, our ſeamen in Torbay are now receiving that recruit from freſh meat, &c. which they ſo much want.

want.—The watering duty is however a great drawback on the health of the fleet. Strange, that a few pounds ſhould be put in competition with ſo vaſt an object! I would have the ſeamen and marines of a fleet fed and exerciſed in a manner that would preſerve them in the higheſt poſſible ſtrength: keeping every moment in view the probability of coming to action with the enemy. But the water at Torbay, like the other ports, ought to be ſupplied to them, for it unneceſſarily expoſes a number of men to ſeverity of weather.

Mr. Bell of the Bellona, remarks, in his report of October, "that catarrhs have been leſs prevalent than in any former autumn I ever remember." This remark ſhows, that there was no reaſon for conſidering the diſeaſe, as it appeared in other ſhips, any thing more than the effect of variable weather, or modes of duty that required great and frequent exertions.

November 1ſt. The fleet ſailed from Torbay, under Sir H. Harvey, Earl St. Vincent's health not enabling him to combat the Channel ſeaſons, as winter approaches.

November 4th. The Warrior, juſt arrived from an eleven weeks, cruize off Breſt, is now free of the malignant ulcer, which was ſo prevalent in May laſt, and more or leſs during the ſummer. Mr. Mulberry obſerved an almoſt immediate difference in the diſpoſition and appearance, as ſoon as the cooler weather, with freſh gales of wind, ſet in. A ſimilar remark is made by Mr. Moffat of the Triumph, in our former Volume, Art. Malignant Ulcer.

The Warrior, while refitting at Portſmouth in Auguſt laſt, by ſome means was infected with typhus. Five caſes were ſent to Haſlar, of which two died. In September the ſhip ſailed, and ſix

others died at ſea, before the diſeaſe was completely overcome.—A filthy and badly accomodated hulk, in Portſmouth harbour, was juſtly blamed for generating this fever. About four years ago, attempts were made by me to correct theſe nuiſances. (See a letter to Admiralty at the end of the Art. Ventilation.)

Novemer 5th. A patient in ſmall-pox having appeared on board the Impetueux, Mr. Fleming, with becoming diſpatch, procured *vaccine matter*, and immediately inoculated fourteen people, including a Lieutenant: others heſitate from ſuperſtitious motives.

About this time three frigates, fitted as troop ſhips, Modeſte, Reſource, and Dido, put into Plymouth Sound, with a view of completing the number of ſoldiers to carry to Egypt. The Admiralty directed me to inſpect them; the Reſource and Dido were ſickly. Some infection had probably been carried on board by the troops, many of whom were raw recruits, and had come from hoſpitals. They had moreover ſlept ſome nights on the boards. Theſe ſhips ſeemed badly fitted for preſerving health; the ſoldiers in a moſt crowded ſituation lay in the orlop, and no air-ſlews had been conſtructed. The ſurgeons had no mates, nor extra neceſſaries for the troops, till ſupplied here on my ſuggeſtion.—The fever was very ſlight; and the whole arrived in three weeks on the coaſt of Syria, having a fair wind all the way.

November 16th. Sailed the fleet from Torbay.

In the courſe of laſt week, the whole of the ſquadron cruizing off Breſt have been forced into port by ſevere weather. The Marlborough of 74 guns was wrecked near Glenan Iſland; but fortunately the crew ſaved.

November 23d. The fleet returned to Torbay, under Sir H. Parker.

It appears from the monthly Report of Mr. M'Cormick of the Immortalite, for July, that the typhus fever brought from Liverpool in the Sea Gull, was alſo communicated to that frigate by ſome of the men. It was mild in its ſymptoms, and ſpread no farther than the new-comers. Mr. M'Cormick ſpeaks handſomely of the attention and diſcipline of Captain Hotham and his officers on this occaſion. We thus ſee how widely infection may ſpread from a ſingle ſhip; it was fortunate that theſe men were mixed with others during a ſeaſon that has uniformly either moderated or checked ſuch kinds of fevers.

Mr. M'Cormick adds, "A few days after going to ſea, a catarrh became very general in the "ſhip, hardly one officer or man eſcaping it. "The weather was remarkably fine at the time; "the thermometer, in the ſhade, ſeldom ſtood "below 72; and the medium heat between "decks, when the watch below were in bed, "was 84; notwithſtanding the current of air, "circulated by three large and well-attended "wind-ſails.

"In the firſt part of the month of Auguſt we "watered at the Iſle D'yeu; the heat was intenſe, "and the greater part of the men on ſhore was "attacked with vertigo and ſevere pain of the "head, which was alſo very tender to the touch. "As I conſidered theſe complaints to ariſe from "exceſs of ſtimulus, the indication I followed "was its abſtraction; which was done by repeated "doſes of calomel and jalap, and the application "of cold water to the part more immediately "affected.—Few of theſe caſes were in the liſt "ten days."—Query? Would not V. S. be the moſt

moſt expeditious and certain remedy in ſuch complaints?

" Towards the end of October, in the 14th " week of our cruize, many of the people were " ſlightly affected with ſcurvy. The lemon juice " had been daily mixed with their grog, together " with the allowance of ſugar.—On my repre- " ſentation to the Captain, an additional allowance " was ſerved unmixed; and in a few days the " ſcurvy entirely diſappeared." The juice muſt have been adulterated.

November 24th. In the courſe of the laſt ſummer, ſeveral ſhips that received much pay and prize money, carried to ſea a full liſt of venereal complaints. Yet the whole have been cured in a few weeks; partly owing to the ſeaman making his diſeaſe known in due time, but alſo being mild in its ſymptoms compared with former times. From the whole Channel fleet, conſiſting of fifty ſail of the line, and an equal number of frigates and ſmall veſſels, coming to refit at the port of Plymouth, it has been the means of bringing into this town more women of the frail kind than have ever been known at a King's port. Yet the occurrence of the venereal diſeaſe has not yet been general, compared with former times.

The patients at the Royal Hoſpital here amount to about five hundred.—On the 20th ſeventy men were invalided after an interval of ſix weeks; a large proportion of them were old men, who are incapable of the preſent ſevere duty. Surely this is wonderful health! But Plymouth hoſpital is not yet remarkable for the cure of bad ſores: ſome

of our ſurgeons cure them with infinitely more ſucceſs and dexterity on board.

November 25th. The Boadicea, after twenty-three weeks' abſence, from Mr. Outram's report, returns in great good health; as detailed in the following manner:

" The Boadicea ſailed from Plymouth on the " 18th of June, and has ever ſince been employed " on the Ferrol ſtation.—During the greater part " of the cruize we have had a ſucceſſion of ſtrong " eaſterly winds, and fine weather, and the Sick " Liſt has continued ſmall ſince the venereal " complaints, and other ill effects of indiſcre- " tion and irregularity in harbour were got the " better of.

" At the end of the tenth week we went to " Liſbon, where we remained five days, and re- " ceived a moſt ſeaſonable ſupply of freſh beef, " vegetables, fruit, and other refreſhments, which " effectually corrected every ſcorbutic tendency. " the judicious allowance of lemon juice and " ſugar daily ſerved with the grog in the form " of punch, together with a large proportion of " onions, iſſued out from time to time to every " meſs, have doubtleſs alſo contributed materially " to our preſent high ſtate of health.

" The late change of weſterly winds and damp " foggy weather have not affected our Sick Liſt; " which I attribute to the very great pains that are " taken to make every man change his wet clothes " and expoſe them in the rigging to dry the firſt " favourable moment: any diſobedience in this " reſpect being ſeverely puniſhed.

" One

" One caſe of typhus, in which the lungs were " moſt dangerouſly oppreſſed, occurred in the " beginning of July. Notwithſtanding the op- " preſſion it was found neceſſary to uſe wine in " conſiderable quantity, and this, with other cor- " dials and ſtimulants, with bliſters, produced the " happieſt effects *.

" The ulcers at firſt were very troubleſome- " eſpecially thoſe formed in conſequence of glan; " dular abceſſes: at preſent however we have " only one caſe of ſinous ulcer."

Mr. Thomas Simpſon of the Fiſgard, reports the variolous infection being juſt apparent in that frigate; imported, as ſuppoſed, from a child brought along-ſide, or elſe from the town of Dock, where the ſmall-pox are very fatal.——I have recommended Mr. Simpſon to inoculate all who have not had the diſeaſe with *vaccine* matter; and Mr. Dunning has, as uſual, kindly ſupplied him with it.

The following ingenious remarks come from Mr. Perkins of L'Uranie, which frigate has been abſent ſince the 28th of May:

" Intermittent and continued fevers, fifty-three " in number, have been our prevailing complaints; " with great debility, and attended with an uncom-

* A diſcerning ſurgeon would never think of bleeding in ſuch a caſe as this: where it has been done, it muſt have been owing to want of experience, which ſhows that ſtitches, ſo called, oppreſſion and ſtrictures of the breaſt, are really very common attendants of typhus.

" mon diſpoſition to putridity. A very abundant " uſe of bark and wine reſtored them, but not till " after a long and tedious convaleſcence.—Nearly " all the ſeamen's wives (who are not included in " the preſent return) ſuffered from the diſeaſe; " in whoſe conſtitutions it firſt appeared by ſore " throat *, determination to the head, and am- " menorhœa.

" None of the ſcorbutics have been confined to " bed; but all required an unuſual quantity of the " acid to affect them. Three ounces, repeated " thrice, in ſome caſes, every third hour of the " day, and continued three or four days, ſcarcely " arreſted the progreſs of the diſeaſe. (Thirty- " three not fit for duty.) But this I think was " alone to be attributed to the imperfection of the " medicine. The women ſuffered from this diſ- " order alſo; and in addition to the accuſtomed " ſymptoms, *ſtrangury* and *leucorrhœa* were pecu- " liarly diſtreſſing."

Theſe laſt ſymptoms are new to our hiſtory of the ſcurvy; and ſtrongly mark the difference of morbid action in the female conſtitution, in both ſolids and fluids.

The lemon juice ſupplied to this ſhip, was perhaps, either ſpoiled by keeping, or adulterated by the acetous acid. It is ſaid that in ſqueezing and preparing the juice, a confidential ſervant of the Sick and Hurt attends to prevent frauds. This may be; but lemon juice has now become ſo great an object of trade, that much danger is to be apprehended from receiving it through the hands of a contractor. I am not partial to men of this deſcription in England; the buſineſs ought to be put on another footing, by Government, import-

* Probably the *globus hyſtericus*.—T. T.

ing

ing the fruit in King's ſhips, and preparing it by the ſervants of Government. If ever our plan of medical inſtitutions in the navy ſhould be adopted, the preparation of lemon juice and Coxwell's concrete will be conducted on buildings erected in the naval dock-yards, or elſewhere, for the expreſs purpoſe of preſerving them genuine.

November 28th. The Alcmene frigate, Captain Digby, which ſailed from Plymouth three weeks ago, carried out the *variolous infection*. Two caſes firſt taken ill were confluent, and terminated fatally. A ſmall prize having been cut out of a Spaniſh harbour, the ſurgeon requeſted the Captain to ſend in her all thoſe who never had ſmall-pox.

Theſe precautions, however, did not ſecure others; the diſeaſe again appeared, and the frigate put into Liſbon. The ſurgeon found thirty men who were unconſcious of having had ſmall-pox; this infection was brought on board by a woman of the town, who had buried her child the day before, and died of that diſeaſe; ſo that it had been carried in her wearing apparel, The men firſt taken ill meſſed with this woman, and ſickened about the ſeventh day.

I have obſerved for ſome time paſt, that the ſhips coming into Hamoaze to refit, ſoon ſuffer from the exceſſes of the people on ſhore. A week has ſometimes done more harm than a cruize of five months; and not to be wondered at, ſince two hundred public houſes have been opened in Dock, and its neighbourhood in addition to what were licenſed before, within the laſt twelve months! Every walk or lane which the ſailor is

uſed to frequent, is now crowded with gin-ſhops.—I addreſſed another letter to the Admiralty on this ſubject.

December 2d. The fleet returned to Torbay; a ſquadron was diſpatched to Portſmouth, and another came into Cawſand Bay. Seven ſail were left off Breſt.

December 4th. Fifteen ſail of the line ſailed from Torbay.

December 7th. The froſt ſet in, rather ſevere.

December 10th. Mild weather.

It appears that the large army which lately appeared off Cadiz were overrun with the ſcurvy: nay, ſo little precaution had been taken to prevent this diſeaſe, that part of the artillery which, in the early part of the ſummer, encamped on the little iſlands near Belliſle, were then afflicted with ſevere ſcorbutic ſymptoms. Yet troops in this condition are to be oppoſed to the batallions of Bonaparte.

In the courſe of laſt month ſeveral caſes of ulcer, of rather a malignant appearance, were obſerved in the Barfleur by Mr. Lloyd. By great attention to dreſſing and cleanlineſs, they, however, ſoon aſſumed a better aſpect. I found one marine with a carious tibia, who was ſent on ſhore.

The ſhips of the advanced ſquadron off Breſt for the laſt three months, have enjoyed wonderful health.

health. In a few inſtances we ſtill find phthiſical complaints; and the oldeſt ſeamen ſeem entirely worn out by the long cruizes; the late ſurveys being chiefly of this deſcription. The Cæſar has been uncommonly healthy.

In the courſe of laſt month opthalmia was epidemic in the Ruſſel.

The following remark, from Mr. Bell of the Bellona, is of great value. "The ſtricteſt and "moſt punctual attention is paid by our officers "of all deſcriptions to prevent the ſeamen from "laying down on the deck in their night watches; "and encouraged to amuſe themſelves with every "thing that can render them cheerful and active." Such men as theſe deſerve indeed the name of officers.

The vaccine inoculation has been ſucceſsfully carried on in the Pompée by Mr. Smith; who has juſt brought to perfect recovery a caſe of fractured cranium, from the moſt diſcouraging and hopeleſs circumſtances.

December 20th. During the few days the Pompée remained in Cawſand Bay, one of the men who had been on ſhore received the ſmall-pox, which did not appear till the ſhip arrived at Torbay, when the patient was landed at Mr. Bell's hoſpital.——Dr. Felix alſo informs me, that a caſe of ſmall-pox had juſt appeared in the Belliſle fitting at Portſmouth.——From the inquiry which this diſeaſe has undergone for the laſt ſeven years in the fleet, the ſurgeons are extremely attentive

to

to early ſeparation, which has much contracted the ravages of this dreadful infection.

December 24th. A few ſhips lately arrived from the ſquadron off Breſt enjoy wonderful health; but the crews are in the utmoſt want of recruit and reſpite from duty unprecedentedly ſevere.

December 30th. The Glory of 98 guns, now in dock, has juſt imported the ſmall-pox. In the Cambridge guardſhip numbers have been infected and ſent to the hoſpital.

The ſquadron ſailed from Torbay; and our noble Commander in Chief fixes his reſidence at Tor-Abbey. The winter hitherto has been mild, with weſterly winds chiefly.

A New Century.

January 1ſt. 1801.

This day being the firſt of the Union between Great Britain and Ireland, the new colours were diſplayed from the ſhips in harbour.

January 4th. The fleet returned to Torbay.

January 7th. The fleet ſailed.

January 10th. The Glory, now refitting in Hamoaze, has, ſince the end of November, ſent upwards of fifty men to the hoſpital, ſome in typhus, caught in the filthy ſtews of Dock, or produced by the poiſonous ſpirits ſold there. Theſe caſes exhibit in afflicting but real characters the account which I ſome time ago ſent to the Admiralty, of the increaſed numbers of public houſes opened in Plymouth Dock, perhaps at this moment

moment under the moſt degraded police of any town in Europe. If any future hiſtorian may wiſh to ſearch for the cauſes that have ſpread ſo turbulent a ſpirit among our ſeamen, he will find them beſt in thſe haunts of drunkenneſs and vice. What avail medical ſkill, or an inveſtigation of remote and occaſional cauſes of diſeaſe, while ſuch polluted ſources of deſtruction to health are overlooked.

The injury to health in this inſtance is alſo aggravated, by a ninety gun ſhip's company being crammed into a hulk of ſixty guns, made ſtill more crouded by an immenſe number of women.

January 15th. The caſes of phthiſis are leſs numerous than they were a few months ago; but many curious inſtances of hypochondriaſis and hyſteria ſtill appear. Some of theſe have exhibited a very ſingular kind of urine like purulent matter, or mucus, and at other times like viſcid bile.

January 20th. The fleet returned to port, and ſailed again next day.

Inſtead of the hoſpital at Torbay being a place of reſt and comfort for the ſick and hurt of the fleet, it appears that the ſyſtem of ſervice, as conducted there, has added much to their affliction. After remaining on ſhore for a few days, they are ſometimes ſent round to Haſlar or Plymouth hoſpital, in unfavourable weather.

About this time V. A. Lord Nelſon, complained of a violent ophthalmia in his only eye, with a membranous ſubſtance ſeemingly ſpreading faſt over the pupil. His Lordſhip's flag was juſt hoiſted in the San Joſef. All perſons round felt for his Lordſhip's indiſpoſition, and many quack collyria were recommended and ſent to him. I preſcribed a dark room, and bathing the eye every hour with cold ſpring water, which in 24 hours

hours had a ſurprizing effect, and in two days more the inflammation was entirely gone. Cold ſpring water I have long thought the beſt eye-water.

January 24. At this time I made ſome applications to Sir Thomas Troubridge, Captain of the Fleet on the ſubject of public ſurveys at the hoſpitals; pointed out ſome important alterations, related the fever on board the Glory, and the effect which the licentious follies of Plymouth Dock had in producing it, and requeſted attention to the filthy condition of the hulks, where the crews of ſhips are kept while in dock.

February 3d. Accounts received that a ſquadron of French ſhips of the line had eſcaped from Breſt during thick weather, and when the blockading ſhips were blown off by ſevere gales.

February 4th. The fleet returned to Torbay, and ſailed next day.

February 8th. The Unicorn has imported the ſmall-pox. The firſt caſe confluent, ſuppoſed to have been brought on board by ſome of the women.

A fever, not unlike what appeared in the Glory, has affected ſome of the Edgar's people. The hulk in which theſe people live at preſent, in point of filth exceeds any thing of the kind I have ſeen:

The following letter, on the ſubject of QUARANTINE, was forwarded at this time to the Admiralty:

Plymouth Dock,
Feb. 9, 1801.

" Sir,

" The ſurgeon of the Oiſeau having, by letter, repreſented to me the ſtate of health in that frigate, with two hundred French priſoners on board, and many of theſe ſeverely wounded; and from the

the circumſtance of having boarded a Swede from Valencia, ſhe has been ſubjected to quarantine at this port *, which precludes me from viſiting her.

" So many inſtances of this kind have come under my obſervation during the war, that it becomes incumbent on me to offer ſome remarks on the ſubject, in hopes, at leaſt, that the naval department may be relieved, from what I conceive to be a miſtaken form of police, in inſuring public ſafety. The regulations of quarantine, as far as medical authorities have preſcribed them, appear to me, more calculated to raiſe falſe and unneceſſary fears in ſociety, than to ſubdue them when they become real. This was ſtrongly exemplified ſome months ago in the Thames, and in the whole hiſtory of the Boulam fever at the beginning of the war. There is no fact in medicine more clearly demonſtrated, than the *yellow fever being incapable of exiſting in our latitudes.* In a thouſand inſtances ſhips have left the W. India iſlands with the fever on board, and as they came homewards, the diſeaſe has uniformly been extinguiſhed. But many of them have ſuffered great affliction, in conſequence of waiting forms of office, to land people debilitated by tropical diſeaſes. The dread of contagion is now become one of the greateſt evils of human life in this country; this dread has been magnified, by extending quarantine to W. Indiamen, and kept alive by the credulous nervous ſenſibility of the Engliſh character.

" (Then follows our account of the Hankey, the Boulam veſſel, firſt proſcribed. Vide Yellow Fever, vol. i. and art. Thought on Plague in this volume.)

* A fatal epidemic fever had been raging in Spain a few months ago, certainly anſwering to the nature of the plague.

But

"But has not the ſpirit of quarantine laws been weakened by leſſening the ſolemnity of their execution? Can there be any dignity attached to the form, that empowers a cuſtom-houſe officer and his boat's crew, utterly ignorant of the buſineſs in which they are employed, to exact obedience from one of his Majeſty's ſhips of war? The very ſhip now ſubmitting to this form, has been a week in Torbay, and had communication with half of the fleet. Such a circumſtance cannot be calculated to impreſs either officer or man on board, with a juſt ſenſe of the importance of bills of health, and in the event of imminent danger, the ſubject might be treated with neglect and indifference. Should not therefore ſome medical authority on the ſpot be eſtabliſhed to decide on the validity of health."

The copy of this letter was, by order of their Lordſhips, ſent to the Lords of Council, but nothing was effected.—I ſuſpect that the medical opinions which are conſulted by the Lords of Council, are of the nervous claſs, eaſily frightened, and eaſily frighten others. Yet it is ſurprizing, that a phyſician of his Majeſty's fleet is not authorized by his office, to give certificates of health to any veſſel whatever.

February 10th. By a report from Mr. M'Arthur of the Naiad at ſea, it appears that ſmall-pox and typhus have been carried from port by that frigate. Both diſeaſes were brought on board by men from the Cambridge receiving ſhip; like her conſort, the Royal Billy, at Spithead; the frequent and copious ſource of infection. (Vide Mr. M'Arthur's account, Contagion.)

February

February 13th. The Captain, now refitting, has imported the ſmall-pox, by a ſeaman on leave, going into a houſe in Dock, where children were ill of that diſeaſe.

February 15th. Very ſevere froſt for a week paſt, and now continues, with cold eaſterly winds. —The winter before had been mild and open, vegetation being ſcarcely checked.

February 17th. The ſmall-pox appeared this morning in the Edgar, in a man who caught the infection in one of the public houſes on ſhore.

Sir Thomas Troubridge, Captain of the Fleet, informs me, that my laſt complaint againſt the ginſhops of Plymouth Dock was ſent from the Admiralty to the Duke of Portland's office, with their Lordſhips ſupport on the occaſion.

February 19th. The Nymph juſt arrived from off Breſt, had carried to ſea the ſmall-pox. By uncommon exertions, on the part of Mr. Grey, the ſurgeon, the diſeaſe ſpread no farther.

February 22d. Caſes of phthiſis ſtill appear in different ſhips.

On account of the variolous infection having been ſo frequently of late communicated to the ſhips; and from the ſupine and tardy proſecution of the new inoculation, I have again made repreſentations on both ſubjects. Although this buſineſs

was rather ungraciouſly taken out of my hands, where ſo many human lives are concerned, ceremony muſt be waved. The caſual ſmall-pox were at this time raging in the town of Plymouth Dock with great mortality.—A copy of this letter was ſent by Admiralty order to the Sick and Hurt Board, where I ſuppoſe it met its grave, for it was never more heard off.

In this communication I remarked, that his Majeſty's ſhips going abroad, were by far the beſt means for extending the benefit of the new inoculation to the colonies; as a ſucceſſion of caſes might be kept up, ſo as to carry the matter in a recent ſtate to the moſt diſtant ſettlement.

February 23d. Mr. Turnbull, of the Venerable, juſt returned from ſea, mentions the appearance of an ulcer, very much reſembling that of the Terrible three years ago. Every ſlight ſcratch or wound ulcerated, and ſwellings of the axilla and inguen were almoſt conſtant followers. Some of theſe tumours ſuppurated, and ulcerated like the original ſore. Some febrile indiſpoſition attended, but not to be compared to that of the malignant ulcer. Mr. Turnbull was very ſucceſsful in the treatment. The debility was conſiderable, and he ſupported the patient well: the local application, beſides the uſual dreſſings, was Pulv. Cinchonæ, which he learned from Mr. Mant of the Terrible. No caſe of this kind was ſent out of the ſhip for cure: the Venerable, on the whole, was the moſt healthy ſhip of the fleet.

February

February 28th. Admiral the Honourable W. Cornwallis hoiſted his flag in the Ville de Paris: Earl St. Vincent being promoted to the Admiralty!!!

The Achille, in one month's abſence from port, has buried five men in typhus. Ten days of ſevere froſt, with hard gales, have moſt ſenſibly affected ſome of our ſhips. The fatigue of duty for the laſt eight months, has ſo much reduced the ſtrength of the ſeamen, that they are unable to bear the weather as heretofore. But I ſuſpect this fever was carried from the Cambridge. (See Mr. M'Laughlan's Report, Contagion.)

The fever in the Naiad, by great attention, is ſubdued; and alſo the ſmall-pox.

March 1ſt. Mr. M'Grath, of the Ruſſel, has begun the Jennerian inoculation with great ſpirit.

The ſurgeon of the Indefatigable complains of the debilitated condition of that ſhip's company.

March 3d. A fever reſembling that of the Glory and Edgar, has appeared in the Magnificent, now refitting, and three have already died. It has originated from infection caught in the public houſes of Dock, and rendered active by the cold filthy lodgings of a hulk, and the uſe of ſpiritous liquors.

March 10th. A typhus fever has prevailed for ſome weeks in the flag ſhip Mars, of Admiral Thornborough, brought on board at ſea, by a party of men, who came paſſengers in the Immortalite from the Cambridge; from the Immortalite were ſent to the Magnificient, from thence to the

Achille, and laſtly, to the Mars. Four have died at ſea. (Vide Art. Contagion.)

March 13th. Phthiſical caſes ſtill appear.—The Royal Sovereign, this day, ſends ten of this diſeaſe on ſhore. Four of theſe in the laſt ſtage. Some of theſe men had loſt relations in a ſimilar complaint, from which it may be inferred, that they are conſtitutionally prediſpoſed, and the diſeaſe called into action by the long winter duty and expoſure to cold, &c.

This ſhip had been almoſt conſtantly at ſea for the laſt fourteen months: ſcurvy was now general, and numbers were taking lemon juice in the uſual quantity from Mr. Smithers, independent of the general allowance.

March 14th. During the laſt cruize, ſome deaths have happened in the Princeſs Royal from pneumonia. But three caſes left in the Sick Berth, though convaleſcent, exhibit remains of typhoid debility, rather than that which ſucceeds pulmonic inflammation. A ſeaman was alſo ſhewn to me, who was reported to be in a ſtate of ebriety, but appeared to me in the dilirium of typhus. He died next day. I viſited a young gentleman in the laſt ſtage of typhus, ſeemingly in a dangerous ſtate, with an intermitting pulſe. I afterwards learnt that he died at the hoſpital.

A fever of the low kind has infeſted the Urania off Breſt, in which two died.—Scurvy was alſo common in this ten weeks' cruize, notwithſtanding the daily ounce of lemon juice.

The

The Terrible, after fourteen weeks at ſea, complains only of debility, and needs recruit.

Mr. Mant ſays, " I have found very beneficial " effects from the *affuſion* of cold water in three " caſes of typhus fever, which, though they ran " out the uſual time, yet were much mitigated by " its uſe. One is now recovered, and the others " convaleſcent.

" I have had a caſe of happy recovery from " drowning, being a long time in the water in a " gale of wind. A rope was made faſt to him " a-long-ſide; but in conſequence of the heavy " ſea, he was nearly an hour in this ſituation, fre- " quently daſhing againſt the ſhip's ſide. It was " *three hours and twenty minutes* before there were " the ſmalleſt ſigns of life, which was at laſt " reſtored."

A Naval Medal *preſented to* Dr. Jenner, *Author of the Vaccine Inoculation.*

Sir, Plymouth Dock, Feb. 20, 1801.

You are perhaps no ſtranger to the information of the New Inoculation being directed throughout the Navy by Admiralty authority. The inquiries which had been inſtituted in the Channel for the laſt ſeven years, had called the attention of the ſurgeons, to guard againſt the introduction of the ſmall-pox among ſeamen; which, in more than a hundred inſtances during that time, had been imported by ſhips; twenty of theſe have occurred within the laſt ſix months, in this fleet only. Amidſt ſubjects ſo ill prepared for its reception, more than the common proportion of deaths has

been the conſequence.——Such was the tenor of our reſearches when Dr. Jenner announced to the world the vaccine inoculation as a *preſervative* againſt variolous infection. *Tandem venias augur Apollo.*

As far as the New Practice has extended among us, it has been followed with the uſual ſucceſs; and ſo mild that the ſubjects of it have not been conſidered in the number of ſick on the liſt. But the value of conducting the vaccine inoculation with ſpirit and perſeverance throughout the navy, may be beſt eſtimated by calculating the ſeamen at ten thouſand who are unconſcious of having had the ſmall-pox: in this proportion I am juſtified by the experience of muſters in infected ſhips. How dignified the councils of any nation, that by timely precaution ſhall ward off ſo much probable human miſery!

The medical officers have not been paſſive ſpectators of an event ſo ſingular in the hiſtory of animated Nature; an event which the philoſopher will contemplate with wonder, and the friend of his ſpecies view with exultation! Although ſecluded by their office from the earlieſt communication with the progreſs of medical ſcience, what relates to the vaccine diſeaſe has been earneſtly ſought after; and the whole of your opinions and practice have excited uncommon attention. I am therefore requeſted to preſent you, in the name of theſe gentlemen, with a GOLD MEDAL, and ſuitable devices, at once expreſſive of *their ſentiments in favour of the New Inoculation, and to commemorate its introduction into this department of public ſervice.* With the more pleaſure I comply with the wiſhes of my worthy aſſociates, as I am confident that no token of reſpect beſtowed on a benefactor of the human race, was ever conferred from

from more honourable or diſintereſted motives. It will not be the leſs acceptable to Dr. Jenner, that it comes from a body of officers, connected by the exerciſe of their profeſſion with the moſt brilliant period of our naval annals. As far as their authority has influence, they thus offer their warmeſt ſupport to the cauſe. The progreſs of truth is ſometimes ſlow, but always certain. It is not in the nature of medical inveſtigation long to reſiſt the evidence of facts; and it is far leſs the province of medicine to check the current of charitable feelings, or to circumſcribe the duties of benevolence. We muſt therefore hope, that while the liberal diſcuſſion it has undergone ſhall ſecure the ſuffrage of the enlightened mind, the love of offspring will confirm its favourable reception throughout domeſtic life.

Accept, Sir, in the name of my naval friends, my hearty congratulations on the honours that await your profeſſional engagements. May the preſent age have the juſtice and public ſpirit to remunerate what poſterity will be glad to appreciate: may the medical faculty have virtue and candour ſufficient to acknowledge the value of your labours: may your example be a model to the riſing members of that profeſſion which you adorn; and, may you be bleſſed with length of days to ſee your diſcoveries the means of abridging and preventing diſeaſe, pain, and deformity throughout the habitable globe.

Incloſed I have the honour to tranſmit a liſt of the medical gentlemen, and their ſtations in his Majeſty's naval ſervice.—I beg, with all perſonal eſteem and regard, to ſubſcribe myſelf, Sir,

Your faithful, humble ſervant,

T. TROTTER.

Dr. JENNER.

Naval Subscribers *to the* Jennerian Medal. 1801.

Dr. Thomas Trotter, Phyſician to the Fleet.

NAMES.	SHIPS.
William Hill, ſurgeon -	Edgar
James Veitch - -	Doris
F. M. Chevers -	Robuſt
Wm. Robertſon -	Garland
W. Hamilton - -	Clyde
Jas. M'Intoſh - -	Galatea
R. Allan - -	Oiſeau
Alex. Denmark - -	Viper
Thos. Smith - -	Nimrod
J. Embling - -	Hoſpital, Torbay
Richard Hardwicke -	Magnificent
S. Hammick jun. -	Royal Hoſpital
Richard Lloyd, - -	Barfleur
An admirer of Vaccinia	
Thos. Stewart - -	Prince Frederick
Dr. Thos. Kein - -	Royal George
B. Keirnan - -	Prince
B. M'Laughlan -	Achille
Hen. Watſon - -	Cambridge
Wm. Muſgrave -	Triton
Jas. Farquhar - -	Captain
Chas. Cooke - -	Penguin
Hugh Hughes - -	Marlborough
Thos. Thong - -	Renard
R. Cuming - -	Leyden
Dr. Edward Boys -	Hoſpital, Deal
Wm. M'Curdy - -	Prince George
Michl. M'Cormick -	Immortalite
Wm. M'Donald -	Montague
Val. Duke - -	Sprightly
Dr. J. Snipe - -	Hoſpital, Yarmouth

P. Cullen

NAMES.	SHIPS.
P. Cullen - -	Agamemnon
Sam. Allen - -	Albion
Wm. Oaſtler - -	Spitfire
S. Hammick, ſen. - -	Royal Hoſpital
Geo. M'Grath - -	Ruſſel
Richard Burke - -	Acteon
Wm. Dingwall -	Nemeſis
John Leggat - -	Overyſſel
James Scott - -	Audacious
Andrew Leſlie - -	Hazard
John Boone - -	Solebay
David Cowan - -	Eurydice
D. S. M'Carthy - -	Beaulieu
W. Nepecker - -	Juſte
James Nutt - -	Cæſar
W. B. Smith - -	Pompée
R. Allen - -	Orion
A. L. Jack - -	Eſpeigle
John Lind - -	Majeſtic
S. Fowell - -	Spider
Wm. M'Mullan -	Canada
J. Toſh - -	Triumph
T. Willes - -	Centaur
James Young - -	Lion
D. W. Bell - -	Indefatigable
Dr. Charles Cudlip -	Mill Priſon
Geo. Bellamy - -	Spencer
James Milligan - -	Malta
John Bury - -	Unicorn
Wm. Gregory - -	Thames
John Landleſs - -	Hydra
Thos. Quin - -	Loire
Wm. Gray - -	Nymphe
John Morgan - -	Amelia
D. Fleming - -	Impetueux
R. Carruthers - -	Wareham
John Home - -	Suffiſante

NAMES.	SHIPS.
Geo. Turnbull - -	Venerable
Richard Thompſon -	Childers
Dr. M. Felix - -	Neptune
David M'Arthur -	Naiad
Thos. Simpſon - -	Fiſgard
Wm. Beatty - -	Alcmene
Ar. French - -	Scout
P. Blair - - -	Mars
H. Perkin - -	Uranie
B. F. Outram - -	Superb
Thos. Mant - -	Terrible
Jer. Smithers - -	Royal Sovereign
John Allen - -	Formidable
Thos. Watherſton -	Temeraire
Ralph Palin - -	Sylph
Morg. Morgan - -	Mill Priſon
Frs. Brett - -	Dragon
Rob. Fairfoul - -	Cleopatra
Dr. Douglas Whyte -	Conſtantinople
Mr. John Bell - -	Pelican

Explanation

Of the Naval Medal presented by the Medical Officers to Dr. Jenner 1801.

Apollo the God of Physic presenting a young Sailor just recovered from the Vaccine Inoculation to Britannia who in return extends a Civic Crown on which is written the word Jenner. On the reverse an Anchor with Mottos expressing the reign of George the Third and the Naval Administration of Earl Spencer.

Dr. JENNER's Anſwer.

To Dr. TROTTER,

Sir,

I beg you to accept my ſincere acknowledgements for the diſtinguiſhed honour conferred upon me, in your preſenting me with a GOLD MEDAL, in the name of the medical officers of his Majeſty's Navy.

From no quarter could ſuch a mark of attention for the endeavours I have exerted, in pointing out the means of annihilating the ſmall-pox, have been received with greater pride, or with warmer emotions of gratitude; ſince there is no ſituation occupied by medical men where the value of the diſcovery of vaccine inoculation could be more juſtly appreciated.

If any thing could enhance the eſtimation in which I ſhall ever hold ſuch a mark of diſtinction, conferred by ſuch reſpectable characters, it is, that it has been preſented to me, by a man who has cultivated the moſt uſeful ſcience with ſo much ſucceſs, and introduced ſo many valuable improvements into the navy of Great Britain.

I have the honour to ſubſcribe myſelf,
With great regard,
Sir,
Your much obliged,
and obedient humble ſervant,
(Signed) EDW. JENNER.

London, 18th April, 1801.

March 16th. The following remarks come from Mr. Outram of the Boadicea, arranged in his uſual neat

neat and ſyſtematic ſtyle. This frigate, commanded till now by Captain Keats, was under a diſcipline and order of the firſt claſs, and eminently calculated to preſerve health, or recover it.

" The Boadicea, after a cruize of more than " thirteen weeks off Abrevarac, in the coldeſt and " moſt unfavourable ſeaſon of the year, returns to " port in the higheſt ſtate of health.

" In the middle of January we had a few ſevere " pulmonic and pleuritic affections; for which, in " the early ſtages, the lancet was uſed with freedom " and advantage, together with infuſion of linſeed " with nitre, bliſters, and vomits, with ſquills. " In the latter ſtages gum ammoniac, aſafœtida, " ſometimes myrrh and the camphorated tincture " of opium at bed-time.

" Among the venereal patients, ſeveral buboes " unavoidably ſuppurated, and have done well.

" Abſceſſes in the lymphatic glands of the arm-" pit and groin have been very frequent, and were " often the conſequence of the moſt trifling ulcera-" tions in the extremities. Three of theſe having " ſuppurated, were found remarkably difficult to " cure. They do better when allowed to burſt " of themſelves, than when opened with the lan-" cet. But when very indolent, argent. nitrat. " was uſed with advantage, to effect an opening in " the moſt depending part of the tumour.

" One of the worm patients, remarkable for an " hypochondriacal diſpoſition, diſcharged ſeveral " jointed tape worms more than two yards in " length. In this caſe, large doſes of colomel and " aloes, and afterwards the filings of iron, were " the means of effecting a cure.

" Although we have had no caſe of real ſcurvy " during the cruize, which diſeaſe has doubtleſs " been prevented, by the almoſt daily admixture

" of

" of lemon juice and ſugar with the grog. Yet we " have had ſeveral indications lately, of the neceſ- " ſity for the refreſhments and recreations of the " harbour, which will appear ſufficiently obvious, " when it is conſidered that the Boadicea has " been only *fifteen days in port* theſe nine " months paſt, five of which were paſſed in the " Tagus."

March 16th. The Admiralty have aboliſhed the private ſurveys at the hoſpitals for conſumptive caſes, from repreſentation, as they were deemed inconſiſtent with the ſpirit of naval ſervice.

I have alſo obtained a commodious decked veſſel for carrying our ſick from Cawſand Bay to the hoſpital.—The beſt period for obtaining favours from Miniſters, is when they firſt come into power.

Some deaths have happened in the Barfleur from a prevailing fever, but its nature not accurately known.

March 30th. The continuance of weſterly winds, which prevent the fleet from ſailing, have contributed to the recruit of the ſeamen, by freſh meat and vegetables, which they greatly wanted.

April 1ſt. This day I viſited the Cambridge, by deſire of Captain Lane. There ſeems to have been much cauſe for blame before he took the command, in the medical arrangements: no regular times for viſiting the ſick having been attended to, by which neglect, no knowledge was taken of ſickly

ſickly ſupernumeraries. The Cambridge had few on board beſides her own men; but I pointed out ſome that were ſent to the ſlop ſhip to be clothed. In all reſpects Captain Lane's orders were favourable to health.

April 26th. Cold eaſterly winds have lately been prevalent. An obſtinate ulcer, ſomewhat reſembling the ſloughing ſore of our former volume, has prevailed on board the Amethyſt, and in two caſes proved fatal. (See Malig. Ulcer.)

May. Some of the ſhips lately returned to port have much ſcurvy. The Reſolution, Captain Gardner, after twelve weeks off Breſt, in the worſt weather, is overrun with this diſeaſe, but not an object for the hoſpital on board.—The Belliſle is alſo conſiderably affected with ſcurvy.

Large ſupplies of vegetables, and bullocks, for the firſt time, are now ſent to the fleet off Breſt.

During laſt month a ſerious typhus fever has prevailed in the Princeſs Royal, of which ſeven have died. This fever is traced to men ſent in a fifthy condition, and half ſtarved, from the Cambridge. The ports of Liverpool and Briſtol are the fruitful ſources of theſe infections. The accommodations in the tenders are of the worſt deſcription, and the new raiſed men chiefly ſleep along the deck, the greater part have no beds.

The ſurgeon pays due tribute to R. Admiral Sir E. Gower, Captain Atkins, and the officers, for their ready acquieſcence in every thing ſuggeſted to extirpate this fatal contagion; and it declined before the end of April.—The whole deaths that happened were in men under thirty years of age.

—We

—We conſider the bloom of life, while the nervous ſyſtem poſſeſſes the moſt acute ſenſation, to be the period chiefly liable to febrile movements.

Beſides thirty-ſeven fevers in this month, thirty-eight more are mentioned under the term, "*inir-* "*ritative debility*," in the language of Dr. Darwin, but to be conſidered nothing elſe but ſlighter inſtances of typhoid infection, and commonly occurring towards the decline of the diſeaſe in a ſhip. (See Contagion and Typhus.)

May 9th. Some ſevere caſes of phthiſis are this day ſent on ſhore from the Atlas; they all affirm, that they had loſt near relations in the ſame complaint. Theſe caſes do not differ from the general hiſtory of this mortal diſtemper as it has prevailed in the fleet for the laſt twelve months. I am, however, in hopes that it will ſoon decline, the mode of duty under Admirable Cornwallis is leſs haraſſing, and longer time is given for the ſhips to refit in port.

Pulmonic and catarrhal complaints have been prevalent, as uſual in variable weather.

May 17th. A typhus, of which nine have died, in the courſe of an eight weeks' cruize, has prevailed in the Magnificent.—While this ſhip was refitting, a ſimilar fever was obſerved, partly to be attributed to irregularities, or infection acquired in the filthy ſtews of Plymouth Dock. But there is alſo cauſe for ſuſpicion, that a new contagion was ingrafted on the old ſtock, by men brought from the Cambridge, almoſt naked, emaciated and dirty, that had been received from the out-ports.

The

The Majeſtic, after burying eleven people at ſea, of a fever brought from the Cambridge, was ordered to Torbay to purify, with two hundred ſick on board. This ſhip had been juſt commiſſioned, and ſuffered from the want of medical attendance; the ſurgeon being left ill at Plymouth. Upwards of fifty bad caſes were landed at Mr. Ball's hoſpital, where himſelf, with nurſes and others were infected with the ſame fever. It was ſome time before the Majeſtic was clear, notwithſtanding the removal of the worſt people.

This was a very fit period to have made examples of the regulating officers at Liverpool and Briſtol, for the unpardonable neglect of duty at theſe ports, in thus propagating diſeaſes that endangered the health of the whole Channel fleet.

May 20th. Near one hundred fat bullocks, with large ſupplies of vegetables, have in the courſe of the week been ſent to ſea; every ſhip that ſails, now carries as many as convenient.

Ten days are now allowed to refit, and to recruit the ſtrength of the people.

May 30th. Two more of our frigates having unneceſſarily been put under quarantine, from having boarded veſſels at ſea, which deprives them of much of the time that ought to be ſpent in recruiting and recreating the people, I have again addreſſed the Admiralty on the ſubject.—The cuſtom-houſe officers have double pay, while employed on this duty, ſo that they look after it moſt eagerly.

The

The Mars, while refitting lately, received the ſmall-pox; as did the Glory ſome time ago, a ſecond time.

May 3d. Four ſhips of the line, the Spencer, Pompée, Juſte, and Courageux, partof a ſquadron that ſailed with Sir Robert Calder in February, in purſuit of a ſquadron that eſcaped from Breſt, after touching at all the Weſt India Iſlands, have returned in the moſt perfect health.

Nine very malignant caſes of ulcer have been ſent from the San Joſef at ſea, ſimilar in appearance to our former ſubject, the greater part of theſe men muſt loſe their limbs in conſequence. (Vide Malignant Ulcer.)

The fever in the Princeſs Royal, after eleven deaths, is nearly extinguiſhed.—Such are the effects of abuſe in the port duty!

A fever is now prevailing on board the Belle-iſle at ſea.

June 10th. A boy belonging to the Juſte, has met with the ſmall-pox, ſomewhere in Dock. By timely ſeparation, which is now minutely attended to, the diſeaſe ſpread no farther.—Mr. Nepecher began the vaccine inoculation.

June 12th. The fleet now off Breſt, in point of health, has already received much benefit from the live ſtock and vegetables ſent to ſea. The increaſed vigour of the people is evident in their looks.

The Robuſt, juſt arrived from a four months cruize off Rochfort, has ſuffered ſeverely from a typhus fever, of which nine have died. This ſhip has been moſt cruelly put under quarantine, from having boarded at ſea a veſſel from the Levant,

more

more than four months ago. Such a ſtretch of the quarantine laws is repugnant to all modern ideas of medical juriſprudence. I have therefore again attempted to call the pity of the Admiralty, to what our ſhips experience after ſuch long cruizes from theſe reſtrictions. Strange to tell, that our fleets and armies are now traverſing the very ſpot that is ſaid to give birth to the plague with impunity, while in England the forms of quarantine are depriving our ſeamen of the common comforts of life.

A very general diſpoſition to ſcurvy at this time prevails in the Robuſt, having had no refreſhment ſince leaving port.

June 16th. Mr. Morgan of the Amelia, returned from a long cruize, deſcribes a fever of the mild remittant typhoid type, which appeared in the month of March, among a ſet of boys who came from the Cambridge the day before the frigate ſailed. They were all young country lads, very ill clothed and dirty. By great attention, the infection was ſoon ſuppreſſed. We thus find that every ſurgeon gives the ſame account of the people who come from the receiving ſhip. Wherever they are ſent, fever follows them.

In April this frigate received the meaſles from a black man taken out of a Dane, from the Loire, in France, where the diſeaſe prevailed. A child of ſixteen months died in conſequence.

The board of Admiralty has ordered that private ſick quarters for officers are to be diſcon-

tinued. But I lament to ſay, that no directions have been given to fit up ſuitable apartments within the Royal Hoſpital in lieu. This certainly could be done for a triffle.

The fleet being now fully ſupplied at ſea with refreſhments, enjoy health (except where infection has been received) equal to the ſummer of 1796. The exceſſes of the harbour are thus prevented, and the trade of the gin-ſhops has ſo much declined, that ſome have failed entirely and ſhut up. Singular ſtratagems had lately been deviſed for carrying liquor into ſhips; for, in proportion to the vigilance of officers, cunning and invention are ſet to work. Veſſels in the form and dreſs of a ſugar loaf, and other articles, the ſmall guts of animals, and bladders formed into the moſt fantaſtical ſhapes, and covered with ſilk or cotton, to be concealed in different parts of the female dreſs, have been all detected.

Sir Edward Pellew encourages his ſquadron off Rochfort, to employ every method for catching fiſh, which has much retarded the appearance of ſcurvy in his own ſhip, and others.—What a pity that this excellent practice is not general in the fleet, when there is nothing elſe for employment. Lord Duncan, in the North Sea, has been always remarkable for his indulgence in this duty.

The Montague, another of Sir Robert Calder's ſquadron, has arrived, having remained only eigh-

teen hours at Martinique, yet in that ſhort time the dyſentery was received, and on the paſſage home ſixteen men, in the prime of life, died of that diſeaſe.

In May laſt, the ſmall-pox appeared in the Atlas, two young children died; but by the dexterous management of the ſurgeon, only one ſeaman received the infection, who was confined in the large cabin, and recovered.

The ſhips which now arrive in port are ſo healthy, as to ſend no patients to the hoſpital. Thoſe that have ſhared duly of the refreſhments, may be juſtly ſaid to have added a third more ſtrength to what they poſſeſſed before.

Mr. Cornfoot of the Diamond, reports the ſmall-pox to have appeared during their late cruize off Madeira: one death in the confluent kind happened out of four that received the infection.

In the ſame frigate, and about the ſame time, in January, a typhus made its appearance, which extended to forty caſes, with one death. It was ſubdued by the uſual means, probably much aſſiſted by the mild weather of the latitude of Madeira and Canary Iſlands, where the Diamond was cruizing. Mr. Cornfoot does not mention the ſource of either contagion.

July 29th. The Prince George, Prince, and Captain, are in perfect health; the two laſt ſend each two caſes of phthiſis on ſhore.

In

In addition to bullocks and vegetables, a quantity of ſheep have lately been ſent to ſea for the uſe of the ſick. Theſe are benevolent attentions, and deſerve commendation.

July 30th. The ulcers rather decline in the San Joſef; but ſome ſigns of the ſame have appeared again in the Prince of Wales.

During the laſt cruize, and ſoon after leaving port, the ſmall-pox appeared in the Prince in two people; they were immediately confined to the cabin, and the diſeaſe ſtopped.—We thus ſee how widely this infection has extended, and how neceſſary it is to keep ſurgeons and officers on their guard.

Auguſt. A few caſes of ulcer on board the Triumph, ſhew ſome tendency to the nature of what was in that ſhip four years ago.

The Uranie has had, as uſual, much ſcurvy, in a cruize of five months; twenty-ſix caſes were moſt inveterate: yet all this happened during the uſe of the ſherbet, and in ſummer weather.

The ſmall-pox alſo appeared ſoon after leaving port, in two confluent caſes; due precaution confined the diſeaſe from extending.

My letters from the ſquadron off Rochfort, complain of the want of meat and vegetables, while the fleet off Breſt have abundance. Some of theſe ſhips have been twenty-two weeks at ſea, but the fine ſeaſon, freſh fiſh, and good diſcipline, ward off ſcurvy during ſo long a cruize.

Auguſt 20th. In the Oiſeau, Mr. R. Allen, met with ſome ſevere caſes of pneumonia, ſince laſt May, when the frigate left port. He makes the following remark on blood-letting in this diſeaſe: "I bled with all the freedom of a French practitioner, paying little regard to the ſtate of the "pulſe, but directing my principal aim to the re-

" moval of the pain of the ſide, and difficulty of " breathing. In one inſtance the patient loſt " ſeventy-one ounces of blood; and in another, " ſixty-ſix, in the two firſt days of the diſeaſe. " Every bleeding was uniformly followed by a " ſubſiding of the pulſe, a temporary remiſſion of " pain, and a general alleviation of ſymptoms. " And, I apprehend, in this dangerous diſeaſe, it " is only by an early, bold, and decided uſe of the " lancet, that we are ever to ſave our patient from " ſuffocation, or an equal fatal termination."

Although Mr. Allen here inculcates a bold and deciſive practice, yet his precepts are to be received with ſome qualifications. The employment of other means for ſubduing inflammation ought to accompany bleeding; and if they are promptly and earneſtly followed up, a much ſmaller quantity of blood taken, will then anſwer the purpoſe. Cool air and cold drink, keeping the body naked, giving the citric acid diluted in large quantity, or its beſt ſubſtitute, acetous acid, with purges, ſuch as pulv. ſcammon. C. cum calomel, that act quickly, and produce frequent and large evacuations: theſe may be all exhibited with ſafety for the firſt three days, and often much longer. The relief from pain and ſtricture of the breaſt, by V. S. is not always to be conſidered as a progreſs towards cure, even in the beſt marked caſe of pneumonia, for large depletion of the vital fluid is often ſucceeded by want of ſenſibility. The ſudden evacuation of a large quantity of blood, is alſo apt to produce effuſion into the bronchiæ, and conſequently ſuffocation: but at all times, when carried too far, there is a very tardy convaleſcence.

The ſame ingenious gentleman makes the following remark on his treatment of a prevailing ophthalmia: " I have derived very manifeſt ad- " vantage from ſmall doſes of mercury. When " the

" the inflammation was ſo violent as to reſiſt " blood-letting, bliſtering, purging, and every " collyrium applied, I have found it yield readily " to that remedy, given in ſuch doſes, as gently to " affect the mouth, although there was no reaſon " to believe the exiſtence of lues venerea, or " ſcrophula in the habit." Mr. Allen did not try the external uſe of very cold water; cold lavation of the head and face is alſo an excellent remedy.

The malignant ulcer has now ſo much declined on board the San Joſef, that on her arrival in port, only three caſes are deemed objects for the hoſpital, and theſe are likely to be tedious in the cure from carious bone.

It does not appear that this ulcer was ſo rapid in its progreſs, or attended by ſuch ſevere febrile ſymptoms as were obſerved in the Queen Charlotte, in 1787, and other ſhips; nor was it ſucceeded by ſuch large ſloughing of the muſcular parts. It has not extended in all beyond ſixty caſes, ten of theſe have been ſent on ſhore, and the remainder cured on board by the indefatigable attention of Dr. Felix, to whoſe abilities and induſtry Captain Wolſeley pays due regard.

Auguſt 28th. The Windſor Caſtle, the flag-ſhip of Sir Andrew Mitchell, Reſolution, and Canada, juſt come from ſea, have all ſuffered conſiderably from ſcurvy, by not receiving the due proportion of freſh beef and vegetables with the other ſhips of the line. The Windſor Caſtle and Canada were in the advanced ſquadron, and the Reſolution has been employed in Quiberon Bay. Some caſes of phthiſis have been ſent on ſhore

from each of theſe ſhips; but they are of ſix or eight months ſtanding. The livid hue of the ſcorbutic diatheſis, is very perceptible in the countenance of all theſe people, notwithſtanding the fine and equal temperature of the ſeaſon.—Let it be ſtill remembered, that the ſherbet was uſed at ſea.

September 3d. Three caſes of phthiſis, of long ſtanding, in the Barfleur, are objects for the hoſpital.

The Centaur, one of the Rochfort ſquadron, has had a number of ſcorbutic caſes, but not ſo ſevere as to diſable them from duty, during eighteen weeks cruize, having had no vegetables during that time, but plenty of freſh fiſh.—During this long abſence from port, the ſick liſt felt the full value of the good things in the ſick meſs, which have rendered the name of their late captain dear to the naval ſervice of the country, the example of which was now ſeen by others.

About this time an advertiſement appeared in the newſpapers, calling upon ſuch navy ſurgeons as were retired, to tranſmit their addreſs to the Sick and Hurt office without loſs of time, under penalty of being ſcratched off the liſt. It alſo hinted at theſe gentlemen making ſervice ſubſervient to their private views, after completing their time of being entitled to half pay.

I ſuſpect that the terms of this call had a very diſcouraging effect on the minds of young men, who might enter the navy as ſurgeons' mates, particularly thoſe of better education, of whom not leſs than three hundred and eighty were wanted at this time, to give the ſhips in commiſſion their full

full complement.—Yet ſuch is the language of office to this ill-fated corps !——

September 11th. Arrived the Orion, having been ſix months at ſea. Five caſes of typhus proved fatal during the cruize, the ſame diſeaſe which infeſted the ſhip while fitting in February. A number of ſevere caſes of ſcurvy appeared latterly, forty-two of which were incapable for duty; few of the good things, it ſeems, had been forwarded to the Rochfort ſquadron. The Orion being lately commiſſioned, with many raw men debilitated by fever, ſuffered from ſcurvy, as a conſequence.

Sptember 12th. Arrived the Belleiſle, having had eleven deaths from typhus. (Vide article Contagion and Typhus.) From having ſhared fully of the freſh meat and vegetables, the crew of this ſhip are high in health and ſtrength.

September 18th. In the laſt month twelve caſes of fever occurred in the Amelia, two of which were fatal. Mr. Morgan could not account for the production of this typhus; it was contracted in its extent, by the uſual precautions, although it exhibited ſymptoms of conſiderable malignity.

The frigates lately returned from ſea continue in their uſual good health; but the whole are reduced in muſcular ſtrength, and require much refreſhment.

September 22d. Received by the Magnificent, Mr. Fleming's Report of Health in the Impetueux for ſix months off Rochfort, to which I have aſſigned an article by itſelf, and refer the reader to it.

The Magnificent's people are generally much diſpoſed to ſcurvy.

It was mentioned in a former part of theſe occurrences, that the Lords of Admiralty, had tranſmitted copies of my letters on the numerous public houſes of Plymouth Dock, and the effect which they had on the health of the ſeamen, to the Duke of Portland's office, with a requeſt for his Grace's attention to their contents.

This grievance to public ſervice ſeems to have originated with ſome avaricious brewers or ſpirit-dealers and diſtillers, who had intereſt ſufficient to lay hold of an immenſe number of public houſes that obtained licences from the paſſive compliance of ſome neighbouring magiſtrates. A new mode of getting cuſtom was obſerved by the publicans, who received into their houſes all the unfortunate women, to the number of ſome thouſands. Theſe wretches flock to the naval ſea-ports for the wages of proſtitution, after being debauched in the interior of the country by the idle and diſſolute ſoldiery. Thus, the populous town of Dock, was apparently converted into a huge brothel. The inhabitants themſelves, eager in the purſuit of thoſe profits which war produces, beheld with tame indifference their neighbourhood ſubjected as it were, to legalize proſtitution; nor once thought what a dreadful example was exhibited in the face of open day, to contaminate the manners of the riſing generation. The taſk of magiſtracy, perhaps never became ſo ignominious, as in diſannulling what itſelf had created: for the Duke of Portland had ordered the houſes to be reduced to one hundred, ſo that two hundred

dred were ſhut up!—The reſpectable part of the community acknowledged the obligations they lay under to a public officer, and a ſtranger, for correcting the police of their town.

This buſineſs muſt be remembered as a great triumph to the naval ſervice of the country. It has called the attention of the government to watch the proceedings of vitiated magiſtracy, and to protect, by wholeſome regulations, a body of men, who, when from under the diſcipline and vigilance of their officers, are no better than inconſiderate children. Their health will by theſe means be preſerved; they will eſcape the ſnares of the diſaffected and deſigning, and their moral conduct will have a chance to be improved.

September. There has been hitherto no ſevere weather. Catarrhs and complaints of the breaſt, bear no proportion to what they did laſt year, not to be attributed to a finer ſeaſon, but rather to milder duty at ſea, and in refitting, which leſs expoſes the body to viciſſitudes of weather, or to be warmed or chilled by labour.

The ſhips of the enemy have never been ſo completely confined to their own harbours as at this period of the war; for ſome time paſt, a prize of any value has ſcarcely been met with by our cruizers.

September 28th. In conſideration of an immence expence having been incurred by the general uſe of lemon-juice for the laſt eighteen months, I repreſented to the Admiralty the good effects to be

be expected from a liberal ſupply of apples, that were now ſo plenty in Devonſhire, and ſo cheap as to be ſold at one ſhilling and ſix-pence per hundred. When the lemons of the country were exhauſted by the large expenditure, during the prevailing ſcurvy of 1795, theſe fruit were ſubſtituted with equal ſucceſs; and with the advantage of being a moſt grateful change to the ſeamen. (Vide Vol. I.) The ſum which this ſupply for the whole fleet would coſt, I ſuppoſed to be about two hundred pounds, which it was eaſy to demonſtrate would ſave two thouſand pounds, by the low price of apples at the time.

The Admiralty, Mr. Nepean informed me, complied with my requeſt, provided the Commiſſioners of Sick and Hurt ſhould judge it neceſſary. Theſe gentlemen however thought otherwiſe, by telling their Lordſhips that they had provided a great quantity of fine onions at a ſmall price, which, with lemon juice and vegetables, they thought equal to the correction of ſcurvy.

Such was the opinion of two phyſicians ſitting in a ſnug corner of Somerſet-houſe, who neither heard the wind blow, or the tempeſt rage. The fleet off Uſhant, it is true, had large ſupplies for preventing ſcurvy; but if a ſaving of public money could be made, by ſupplying articles of equal efficacy, and more deſirable under the circumſtances of ſervice, I have no heſitation in ſaying, it ought to have been done. On inquiry at the agent of the Royal Hoſpital, I learned that no change had been made in the purchaſe of onions for the fleet.

Query. How long would theſe Commiſſioners of Sick and Hurt like to live on onions and lemon-juice, as preventives of ſcurvy, in a dreary winter cruize

cruize of twenty weeks, off the black rocks at the entrance of Breſt harbour?

While it is my duty to preſcribe rules of health to a fleet of brave men, ſecluded from the comforts of the land, God! of Mercy! remind me of the Chriſtian precept, *to do as I would be done unto!*

October. By order of Admiralty, Rear Admiral Dacres, and myſelf, are authorized to viſit and inſpect the priſon ſhips in Hamoaze weekly.

Oct. 4th. Sunday. This day accounts were officially announced of PRELIMINARIES OF PEACE having been ſigned in London, on Thurſday night, by Lord Hawkeſbury and M. Otto.

Mr. Caird of the Prince of Wales has, for ſome months paſt, had a laborious taſk with bad ulcers. (See Malignant Ulcer in this Volume.)

October 30th. In the Courageux, juſt arrived from a twenty weeks cruize off Rochfort, Mr. Clifford has, by indefatigable exertion, eſtabliſhed a ſick meſs, ſimilar to that of the Centaur. (Vide Diet.) The creditor ſide is already ſo conſiderable, as to be equal to fit out with all the uſual dainties for a long cruize. Although the war has paſſed over without obtaining our wiſhes on this head, yet a few good precedents are valuable.

An uncommon recovery of a fractured cranium has been effected, during this cruize, by Mr. Clifford. The whole parietal bones and ſcalp were ſhattered

ſhattered to pieces. The trephine was applied in four places; the depreſſed bones were elevated; the ſcalp united; and the patient reſtored, after being for eight days totally inſenſible, with paralyſis of the inteſtinal canal, and other hopeleſs ſymptoms.

November 6th. A very large crop of venereal caſes, Mr. M'Curdy informs me, (fifty) were the fruit of the laſt viſit to Cawſand Bay in the Prince George. This ſhip, the flag-ſhip of Sir C. Cotton, has been the healthieſt ſhip of the fleet. They ſend no men to hoſpitals.

The fleet is now divided; the Commander in Chief with a few ſail in Torbay; a ſquadron in Ireland, and another ſaid to be gone to the Weſt Indies.

November 10th. Complaints have lately been very general in the fleet, againſt the neceſſaries for the ſick. The tea and ſugar have become ſo bad, as to be totally unfit for men labouring under ſickneſs. When Earl Howe commanded, amidſt other forms of his correct ſyſtem of duty, was an order that the maſter, mate, and ſurgeon of the ſhip ſhould examine the quality of theſe neceſſaries, weigh the whole, and report the defects of both on coming on board, as a check upon the contractor.

November 11th. An uncommonly large number of venereal patients for theſe times have appeared

peared in the Mars, ſince the beginning of October.—The cruizes during the late ſummer were ſo long, and ſo few ſhips in port, that the unfortunate women almoſt loſt their means of ſubſiſtence. Hence this variety of wretchedneſs, by not being able to pay for cure; and thus the ſeamen, on returning from ſea, are doubly expoſed.

About this time the Juſte imported the ſmall-pox at Plymouth Dock, of which four died!

A caſe of the ſame diſeaſe was lately found in the Mars, and ſent away in due time.

November 16th. Mr. Perkins of the Uranie, juſt arrived from ſea, complains much of the ſcorbutic diſpoſition of the frigate's crew. Nineteen caſes had attained the worſt ſtage, before the lemon-juice arreſted its progreſs. It is not uſual for frigates, or ſmall veſſels to ſuffer ſo conſiderably from ſcurvy; but the Uranie has had much haraſſing ſea-duty. He adds, "Moſt of the patients "on the ſick liſt, have large and numerous boils "on various parts of the trunk and extremities; "much inclined to ulceration, and very difficult "to heal." As the quantity of lemon juice is extended, there is the greater reaſon to ſuſpect adulteration; for the expenditure of the laſt twenty months far exceeds the proportion of fruit imported. Some avaricious contractor was perhaps enriching himſelf at the expence of the public.

December 8th. A ſingular inſtance of good health during a late cruize, occurred in the Excellent, commanded by Captain Stopford. It appears from Mr. Bennet's report, that the Excellent, in the beginning of Auguſt, carried to ſea thirty-eight caſes of the venereal diſeaſe; theſe, with a caſe of icterus, and one of mania, were the whole on the liſt for the month. In September all the venereals of the preceding month were diſcharged cured;

cured; and in the courſe of this month one accident, and one caſe of pneumonia, with ſix new venereals, compoſed the whole liſt, and were cured within the month. The only caſes which were admitted into the liſt in October were, *one* of pneumonia, and *one* of lues venerea.—The Excellent, during this uncommon health, was cruizing about Quiberon bay; but it is rare to meet with ſuch good health in the boiſterous weather of the Channel.

December 30th. Mr. Simpſon of the Fiſgard, like other ſurgeons, continues to ſpeak moſt favourably of Mr. Baynton's method of dreſſing ulcers. This gentleman's practice was indeed eſtabliſhed in the fleet, ſo early as ten days from the publication of his work, and almoſt before it was tried any where elſe.

The ſame gentleman favours the opinion we have given of nit. acid aſſiſting mercury in ſome caſes of lues, but ineffectual by itſelf.

February. The fleet in Torbay continues, with very few exceptions, to enjoy the moſt perfect health. The fatigue of ſevere ſea-duty has been prevented during ſome hard gales; all ſcurvy is overcome by the long uſe of freſh meat and vegetable refreſhments; and the expoſure to drinking ſpirituous liquors in a great meaſure done away by keeping the men on board.

Mr. Burd makes the following remark on the health of the Ville de Paris: "The health of this "ſhip during the laſt twelve months, of which "time I have been ſurgeon, has been uncom-"monly good: there has been occaſion to ſend "only ſix men to the hoſpital. One of theſe was

" blind when he joined; one was overrun with " ſcrophula; two were Italians, whoſe lungs were " affected from blowing wind inſtruments; one " hectic of a ſcrophulous habit, and one with a " gangrened penis, from having forcibly puſhed " a bougie through the coats of the urethra. Two " have died on board in that time; one with " calculi in the ureter; and the other an infirm " old man, who was ſubject to habitual cough." What health in a ſhip containing near 900 men!

Ulcers of an unpleaſant nature have appeared in the Royal George. See the judicious detail of this occurrence, by Mr. M'Donald in the article Malignant Ulcer.

Ulcers of the leg have lately been very frequent in the Belleiſle; but Mr. M'Arthur only found them troubleſome, from ſympathetic buboes appearing in the groin, which often ulcerated.

April 13. The medical ſtaff of the fleet was this day diſcharged by order of Admiralty.—Thus terminate the war, and our inquiries!

MEDICINA NAUTICA.

CONTAGION AND TYPHUS.

THESE ſubjects have not yet loſt their importance in Nautical Medicine.——Although occurrences in Channel ſervice ſtill point out the defect of arrangements for ſecuring health; yet we have much reaſon to congratulate ourſelves on the attention which has been paid to our opinions, and the general ſupport which our means of ſubduing Contagion have met with throughout the Navy. The preſent Chapter, it is expected, will ſhow what progreſs this buſineſs is making among officers and ſurgeons.

The ſpirit of fumigation had arrived at its full height, on the introduction of the Nitrous Vapour, publiſhed by a Court phyſician, countenanced by the Admiralty, and directed by the *Codex Officialis* of the Sick and Hurt Board. But not one of its ſupporters have yet ventured or deigned to go one ſtep into the inquiry concerning the nature of Contagion, or its chemical attraction for this vapour. The naval department, they were led to believe, would eagerly embrace the practice, on the authorities which accompanied it; but fortunately for the ſervice of the country, it came at a time when the ſubject of health was beginning a new

new æra; and when both officers and ſurgeons doubted the validity of what came in ſo queſtionable a ſhape.

The world has now ſeen a ſecond Edition of Dr. Smyth's Work; in which he has publiſhed ſome reports of naval ſurgeons to the Commiſſioners of Sick and Hurt, on the *ſuppoſed* efficacy of this antipeſtilential Fume. I do not mean, at this ſtage of the diſcuſſion, to criticiſe thoſe *ſelect* Reports; but I feel moſt unfeignedly for the reputation of the medical officers, when I behold official documents laid before the public eye in defence of the groſſeſt deluſion *. Yet theſe are all that the Board have produced from ſeven hundred ſurgeons, after ſeven years war! There is one thing for which I give the reporters due credit; attention to cleanlineſs is a part of their operations. But at the ſame time I cannot help remarking the paſſive ſpirit of theſe gentlemen, with the fuming pipkins in their hands, that they never aſked themſelves, what is the chemical nature of this Contagion? does it poſſeſs form or ſubſtance? how does this vapour act in deſtroying it? Theſe queſtions aroſe ſo naturally from the employment of fumigation, that it ſhows as much a want of common curioſity, as it was unphiloſophic, not to intereſt themſelves in the buſineſs. A diſeaſe diſappearing, during the time any article of the Materia Medica is uſed, may receive the

* The Board, under Lord St. Vincent, has given no countenance to this fumigation: indeed, Captain Markham, now at the Admiralty, had ſeen the futility of this proceſs, as well as all others of the kind, in clearing the Centaur of a typhous contagion off Cadiz: Vide Med. Naut. Vol. II. p. 241. I alſo underſtand that an order has been iſſued to grant no further ſupply of theſe articles.

credit of the cure from an ignorant byſtander, or a ſhallow obſerver; but the man who notes the hiſtory of caſes; the mind inquiring after truth, muſt weigh cauſes and effects; draw concluſions from reaſonable premiſes, and appeal to principles confirmed by experiment and matter of fact only. To ſay that the nitrous vapour ſubdues contagion without explaining the manner, is like the fly on the chariot wheel in the fable. It reminds me of a ſtory told to children, that the Great Mogul orders a bell to be rung when he goes to dinner, and conceits that the whole world dines at the ſame time. In like manner theſe gentlemen trim their pipkins, and conceit, while the fumes aſcend, that whatever is contagious within their reach is annihilated and deſtroyed.

——— It was great pity, ſo it was,
This villainous ſalt-petre ſhould be digg'd
Out of the bowels of the harmleſs earth,
Which many a good tall fellow had deſtroy'd
So cowardly. SHAKESPEAR.

Acron, a phyſician of Agrigentum, was the firſt who thought of "*lighting fires, and purifying* "*the air by perfumes*," to put a ſtop to the peſtilence that ravaged Athens, anno ante Chriſtum 473, ſo that this ſpecies of ſuperſtition is of pretty ancient date. Some time ago, I had an intention of writing the hiſtory of Fumigation, from Acron's *Perfumery* down to the nitrous vapour of 1796; but I met with ſo many ludicrous ſtories of necromancy, exorciſm, ſorcery, and witchcraft, that the ſubject began to loſe all the gravity of a ſcientific inquiry. It was therefore given up. Some phyſicians who have more confidence than myſelf in its divine origin, will probably find themſelves called

called upon to explore the tradition of their medical creed.——

Allowing that nitrous gas, or nitrous vapour, as as it is called, gives out oxygene to the atmosphere, let me ask its advocates what becomes of the azote it was previously combined with? In short, examine strictly all the authorities on which its credit rests, you find nothing but affirmation, instead of explanation; and the whole good effects are resolved to neutralizing the bad smell; a task that belongs to the nurse and chambermaid, and not to the physician.

But let us return to a more profitable subject.

The first ship on our present list is the Saturn. This ship arrived in Cawsand Bay on the 16th of April 1799, from a six weeks' cruize, during which twenty-seven cases of typhus appeared; of which one man, subject to phthisis, and addicted to intoxication, died. Mr. T. Johnston remarks, "I could not trace this fever to any infection imported by any of the people; but as the variolous contagion had been brought on board in the clothes of some women, the febrile infection might also come in the same manner, there being two hundred women in the ship. Intoxication was very general when in port before the cruize, though little known at sea. But a very bad practice was completely indulged in: when the watch was not employed during the night, they went to sleep on the boards under the half-deck. They were so attached to this custom, that not even wet decks prevented them from

" lying down. On our arrival in Cawſand Bay, " the practice of inebriety was again indulged " in.

" On the 29th of April we began to unrigg the " fore-maſt and bowſprit to get others in: this " duty was much hurried, that we might ſail with " the fleet. But when it was known that the " French fleet was out, nothing could exceed the " exertions of both men and officers to get the " ſhip ready for ſea. The hammocks were not " more than four hours below: the ſentinels that " kept the middle watch had not an opportunity " of being more than one hour in bed out of the " twenty-four. We had now ſome blowing wea- " ther, with rain and cold. During a gale, there " was duty to be done which required the men to " be much in the water; the ſea ran ſo high as to " waſh many of them away till picked up by the " boats, when others ſupplied their place. The decks " all this while were dirty and full of lumber; and " the orlop in a moſt ruinous ſtate to health."

Under theſe circumſtances a typhus could not fail to ſpread, and to gain freſh activity, which it did. The nitrous fumigation, to which Mr. Johnſton was partial, was practiſed from the firſt appearance in the Sick Berth and decks; on the morning of the ſixth of May nineteen were ſeized, and on the morning of the ſeventh forty-five made their complaints known. This day, at noon, I viſited the Saturn, having come to reſide at Plymouth Dock, by order. At this viſit I interdicted the further uſe of nitrous vapour, that the ſaltpetre might be reſerved for better purpoſe, and recommended our uſual means of purification, which, from their ſimplicity were eaſily underſtood, and as eaſily performed. No caſes appeared after the

the 12th, but an immenſe number in all were ſent on ſhore; many of whom got away on falſe pretences, by invaliding.

The ſervice, however, gained ſomething by this ſtate of the Saturn. I found that the infected beds at the hoſpitals were only fumigated, but *never* had been ſcoured. I therefore requeſted Captain Totty to inſiſt upon their being waſhed, which was done at the trifling expence of ſix-pence a pair for blankets. It is much to be wiſhed, that on all ſimilar occaſions officers ſhould attend to this neceſſary proceſs. It is well known that the bed-houſes are common ſources of infection, from whence ſhips have often imported diſeaſes; and how can this be otherwiſe, till every article undergoes frequent expoſure out of doors to the air and cleanſing with ſoap and water.—Conſult Admiral Pringle on Hoſpital Bed houſes.

Mr. Johnſton's treatment is thus judiciouſly given: "On the firſt attack the patient was carried to the Sick Berth, and carefully waſhed with ſoap and water; put on clean clothes and took an emetic. When its operation was over he took miſt. ſalin. ℥ij every two hours, and an ounce of wine every intermediate hour. At bed-time pulv. antimon. gr. vj. op. gr. i ſt. bol. If vomiting returned he took deccot. quaſſ. ℥ij. T. opii gut. 5 ft. hauſt. 2da. quaq. hora. The bowels were kept rather open. Diluting drink, with wine ſometimes to ℔ij in 24 hours. When remiſſions took place bark was given with the wine, in ſuch doſes as the ſtomach would bear, and continued till the appetite was perfect." Twenty-eight caſes were cured on board by this method of treatment.

This narrative ſtrongly exemplifies the rapid progreſs of contagion when aſſiſted by exceſſive fatigue, ebriety, expoſure to cold, and other debilitating cauſes. We are ſurprized at the officer of a night-watch allowing his men to ſleep on watch at all; but he is doubly culpable to permit this on wet decks. The loſs of a yard or a maſt is a trifle compared with the loſs of health. I have often wiſhed to ſee a code of rules reſpecting health from Admiralty, by which means every ſhip would be brought to due order of diſcipline. At this moment the internal economy of many in the fleet differs as much as the features of their officers.

In the month of Auguſt, while the Hector was docking in Portſmouth, a typhus appeared, that was traced to a place called *Oakham Bay*, where a number of low women live. It is rather uncommon to find typhus prevailing at that ſeaſon of the year; but this ſummer was an exception. The rain which fell in the ſummer and harveſt exceeds any computation ever made, and the weather was cold as November. I am ſorry that Mr. Crawford's paper on this fever has been miſlaid; but it chiefly related to the inefficacy of the *nitrous vapour*, in deſtroying the contagion. When the Hector came out of dock, and the officers returned to their own modes of diſcipline, the fever quickly diſappeared; although in the hulk the vapour was duly perſiſted in.

On the 26th of September the Uranie frigate, Captain Towry, arrived from his ſtation off Breſt, with a fever ſuppoſed to be infectious, of which two men died at ſea.

It

It does not appear that any imported contagion could be ſuſpected here; the frigate was under fine diſcipline, but leaky in her upper-works, and the weather for ſome time tempeſtuous. Theſe cauſes we frequently obſerve, produce fever of the typhoid kind, that is evidently ſpread by contagion, as it appears among attendants of the ſick and others not expoſed to the ſevere duty of the ſhip in hard gales, &c.

Mr. Perkins remarks, "this fever had two "kinds of attack, or orders of ſymptoms; dif- "fering only perhaps in the particular conſtitu- "tion of the patient.

"The firſt is attended by violently increaſed "action, with ſeemingly great determination of "blood to the head, with ſtrong and diſtreſſing "pulſation of the carotid and temporal arteries; "full diſtended countenance; *tunica conjunctiva* "inflamed; eyelids heavy, and tongue large; "hard and aparently oppreſſed pulſe, univerſal "pains, hot ſkin, *tinnitus aurium*.

"In the other, the animal functions are evi- "dently impaired; the features are ſhrunk, and "the whole countenance expreſſive of a dejection "of mind, in ſome inſtances amounting to terror; "great pain and heavineſs over the eyes; pain in "the ſmall of the back; anxiety; tongue ſmall "and white; nauſea; ſkin dry, but not un- "uſually warm; ſometimes giddineſs and imper- "fect viſion; pulſe ſmall and quick: coſtiveneſs "precedes both attacks."

It is to be obſerved, that the attack of this fever might exhibit theſe orders, without any real difference in the nature of the diſeaſe; and it might depend very much on the time of the acceſſion, that the ſymptoms were noted. The cold ſtage

would exhibit thoſe ſigns, laſt mentioned by Mr. Perkin, and the hot ſtage, thoſe narrated in the firſt order. This is a very intereſting part of medical practice to the young and inexperienced ſurgeon; for the early treatment of typhus muſt often determine the fate of the patient. If the temporary appearance of excitement, during the hot ſtage of the acceſſion of the fever, ſhould urge him to the uſe of the lancet, a debility will be found to ſucceed, *from whoſe bourn no traveller returns.* Theſe are cautions to be found in no other author; but they are not the leſs juſt, and will amply compenſate the feeling mind for every extra viſit he makes to the ſick bed of a fever patient. Indeed their truth is admitted in the following candid remark of Mr. Perkin. "Both the men that died "were ſeized with the firſt order of ſymptoms; "both were bled, and the primæ viæ cleaned. "But whatever difference in other caſes there "was in the mode of attack, the diſpoſition of the "diſeaſe ſo changed in four or five days as to "render the ſame method of treatment neceſſary "throughout the whole." This implies that the ſymptoms of *apparent* excitement ſoon diſappeared, and the real genius of typhous was more diſtinctly marked after the fourth or fifth day. Fluſhed countenance and inflamed eye, even laſt much longer in a number of typhous caſes, when there are preſent the moſt evident ſigns of weakened and depreſſed nervous energy: of ſuch great importance it is to enquire into every circumſtance that is connected with, or preceded the indiſpoſition of the patient.

Several of the Uranie's people died at the hoſpital, out of forty ſent on ſhore, and ſhe was conſidered ſafe in ten days from her arrival.—In one

of

of my visits to these people, with Captain Towry, the hospital physicians complained to the Admiralty, that I interfered with their practice, when I desired two convalescents, to request from their attendants wine without bitters. The wine it appeared was embittered S. A. to prevent it from being drank by the nurses, who in this hospital exhibit all the medicines, and these patients were throwing it up. The plain truth of the matter was, I was extremely angry when I beheld such a custom, and must have been a cold-hearted wretch had I done otherwise. The Admiralty restricted my visits, but these gentlemen in a short space, thought proper to relinquish the bitter practice.

October 6th, 1799. The Captain, commanded by Sir R. Strahan, Bart. arrived in Cawsand Bay, having typhus on board. This ship a few days before came to Torbay, with a squadron under Sir J. B. Warren, Bart. had experienced much bad weather, and was leaky in her upper works. One man died on board, on the third day of his fever, and eighty were landed at the hospital, some of whom were very slightly affected, but others of them died on shore.

No imported contagion could be traced, but that the fever was contagious, is evident from the first men that complained being all messmates; it then extended to the attendants of the sick, and a boy was affected who occasionally visited his messmate in the sick-berth: this is the usual progress of infection.

Mr. Farquhar says, "About twelve days ago a "fever began to make its appearance on board "the Captain, which since that time has rapidly

" ſpread to thirty others, one of whom became " delirious, and died on the third day from the " attack. The ſymptoms are, ſevere head-ach " and giddineſs, ſickneſs, or pain at the ſtomach, " ſenſation of cold in the back and loins, great " weakneſs, and general uneaſineſs over the body; " the eyes, and countenance dejected. Theſe " complaints are ſucceeded by frequency of pulſe, " and hot ſkin; the tongue becomes foul and dry, " and the patient is frequently ſeized with delirium. " The belly is in general regular, though ſome " have had a troubleſome diarrhœa."

Mr. Farquhar's practice did not differ from what we have had ſo often occaſion to mention. The Captain was under fine regulations, and ſhe was deemed fit for ſea in ſixteen days, and ſailed early in November.

On the end of December 1799. A fever of the typhoid kind appeared in the Cæſar, then at anchor in Torbay, previous to which the ſhip had enjoyed uncommon good health. Mr. Nutt's account of the ſymptoms does not differ from the uſual train in typhus; but it made little progreſs, few at a time being confined, and did not in all extend to above fifty caſes, from the 28th of December to the 28th of March.

Mr. Nutt thus deſcribes its production: " I am " of opinion, that the fever was generated by the " general dampneſs of the ſhip; the bedding fre- " quently getting wet; by the hammock clothes " being bad, the upper decks being leaky, and " getting the clothes wet on duty from bad wea- " ther. The ſerving of grog was hurtful: it is " well known that they buy it of one another, get " drunk,

" drunk, and ſleep on the deck. From the 7th " of December till the 2d of January, the ſhip " was at ſingle anchor, during which time we had " ſtrong gales from the eaſtward, with rain, ſleet, " and ſnow. The lower gun-deck was continually " wet by the water that came in at the hawſe- " holes, and the tiers were kept damp, by fre- " quently veering out and heaving in the cable.— " From the 3d of January to the 6th of February, " the wind was weſterly, with a great deal of " rain, and damp weather.—On the 6th of Febru- " ary we ſailed, and till the 23d of March, when " we anchored in Cawſand Bay, the weather was " good for the ſeaſon of the year."

I obſerve from Mr. Nutt's Diary, that after the Cæſar went to ſea, when the weather was mild, the attacks of fever became leſs frequent; for in the ſeven weeks, only twelve caſes of fever appeared. This confirms our general obſervation, that the progreſs of typhus is greatly influenced by the ſtate of the weather.

Mr. Nutt adds, " Particular care was paid to " keep the patients clean in their perſons, &c. " and no perſon was allowed to viſit thoſe in " fever but the attendants. During our ſickneſs " no waſhing of decks was allowed; they were " cleaned by *ſcraping* and *dry rubbing with ſand*, " fires in the day were placed between decks, and " in the orlops. The ſick-berths, cock-pits, " tiers, and between decks, were waſhed with " vinegar. Sir James Saumarez ſent every day " ſome freſh meat, to be made into ſoup, which " contributed much to reſtore health.

" The general method of treatment was, to " give an emetic, and a bolus of pulv. antim. and " opium at bed-time. The bowels were kept

" open,

" open, by gentle laxatives. Opiates with miſt. " camphoræ at bed-time were continued. I did " not repeat the antimonial beyond the ſecond day, " as the ſtomach was very irritable, and I thought " it increaſed the irritability. If the ſtupor was " great, and delirium came on, bliſters were ap- " plied, and always with relief, except in one caſe, " which was fatal. As ſoon as any remiſſion took " place, I gave decoct. cinchonæ, with miſt. " camphoræ, and where the ſtomach would bear " it, cinchona in ſubſtance, but this was ſeldom to " be done at firſt. Wine in moderate quantities " was allowed from the beginning, and increaſed " to a pint a-day, which I thought was ſufficient, " as the wine was of a good quality. As ſoon as " convaleſcence appeared, the man was moved " into another berth, under the forecaſtle."

The Captain's clerk was ſent on ſhore at Dartmouth of this fever, where he died from relapſe. Some midſhipmen, who meſſed with this gentleman, took the fever, from which it was inferred with juſtice, to be of a contagious nature. The attention paid to health in this prevailing ſickneſs, reflects much credit on the Captain, officers, and ſurgeon, as they had to contend with the worſt part of the ſeaſon, and only three caſes were ſent out of the ſhip previous to going to ſea. We ſometimes obſerve young gentlemen affected with diſeaſes of this kind when prevailing in ſhips; and in Mr. Nutt's liſt I find five of that deſcription. Their age is generally of that period moſt liable to contagious fevers, at which, a ſingular ſuſceptibility muſt be inherent in the body, for they can have little or no communication with the ſick.

A fever

A fever proceeding from the ſame cauſes, as thoſe mentioned above, appeared in the month of January, on board the Edgar. Mr. Fuller, the ſurgeon, was ſick a great part of the time in which this malady prevailed, and ſix deaths happened before the ſhip came to Cawſand Bay, on the 6th of February, 1800. (Vide the General Abſtract of Health.) On this account no perfect detail came to me on the ſubject. Such occurrences fall heavy on public ſervice, as well as on the brave men who become victims to theſe diſeaſes. The fever, in its early ſtage, ſeemed combined with both pneumonic and catarrhal ſymptoms; and, in ſome, it aſſumed the form of dyſentery. When continued gales of wind, as often happen in this ſeaſon of the year in the Channel, call for uncommon exertions of duty, ſuch complaints muſt naturally follow. But a careful inveſtigation of cauſes will remind the ſurgeon, that his patients have ſuffered exceſſive fatigue, have ſuſtained an immenſe loſs of muſcular excitability during their labours; and that under ſuch a condition of body, to take blood from them, is reducing them to the extreme degree of both kinds of debility. Indirect debility has already been induced by exceſſive muſcular action; and by bleeding, is withdrawing that excitement which is beſtowed by the vital fluid, which brings the ſick man to a ſtate of direct debility, and which, added to the other, leaves him little ſhort of death.—I ſubjoin an abſtract of the Edgar's fever patients from coming to port till ſhe ſailed.

During the Fever in February and March 1800. Abſtract from Sick Book.	Petty Officers.	Able.	Ordinary.	Landſmen.	Boys.	Serjeants.	Corporals.	Privates.
Sent to Plymouth Hoſpital	10	17	30	24	1	2	2	47
Retured from thence -	5	4	8	5	1	0	1	3
Total not returned - -	5	13	22	19	0	2	1	44

H. M. S. Edgar, March 31ſt. 1800.

On this occaſion the nitrous fumigation had a very fair trial. The ſtate of the weather was ſuch, as almoſt to prevent the employment of other precautions againſt infection: but the fever ſpread with rapidity to half the ſhip's company, and was only checked by a very different method of prevention.

When the nature of a fever is not clearly known at the very firſt outſet, a correct hiſtory is ſcarcely to be expected. A latent infection that had been only called into action by particular cauſes, is thus overlooked; the early caſes, which are always marked by the moſt aggravated ſymptoms, meet with injudicious treatment; and if the medical attendant is at all officious in his practice, the moſt fatal conſequences enſue. *Heu! ſero ſapiebant Phryges.*

March 28th, 1800. This day arrived in Cawſand Bay, the Pompée, Captain Stirling, having on board ſeventy caſes of fever. This ſickneſs became

became general a ſhort time after its appearance, in the beginning of March. Some accounts were given me, that a man brought from the Royal Hoſpital at Haſlar, had the fever upon him when he joined the Pompée in Torbay: but a more correct hiſtory of that caſe, from Mr. M'Laughlan of the Achille, the ſhip which carried him from port, convinced me that this was not the origin of the diſeaſe. I was abſent when the Pompée arrived, and did not viſit her the firſt week. To this period eight deaths happened, all of which, as far as I could learn, ſunk under the uſe of the lancet. About an equal number died on ſhore, whoſe treatment I knew nothing of; but I can ſuppoſe it was not from inordinate uſe of the grape. The ſeparation quickly overcame the fever on board, except what happened from relapſes in thoſe ſent from the hoſpital. Many of theſe had indulged the pleaſing hope of being invalided, from the facility with which they ſaw it accompliſhed; and thoſe that were diſappointed, ſeemed to feel it moſt ſenſibly. The Pompée to this period, had been one of the moſt healthy ſhips in the fleet; was clear of fevers when ſhe ſailed again, but had a number of convaleſcents at that time, that afterwards got well. This ſhip was one of Sir R. Calder's ſquadron that went to the Weſt Indies in purſuit of the French under Admiral Ganthaume, and returned to Cawſand Bay with only one object for the hoſpital.

The nitrous fumigations of Dr. Smith were carefully practiſed during this contagion, till I viſited the Pompée, when the idle waſte of ſaltpetre was ſtopped.

The Pompée's ſick-berth, by order of Lord St. Vincent, in the ſummer after the fever, was changed into the *Markham* form; which includes the

the head door and midſhips, with a ſky-light over that, like the Centaur, and thus converted into a commodious diſpenſary.

I muſt here refer my readers to the general abſtract for May 1800, for ſome general remarks on the production of fever. The diſeaſe indeed ſeemed, during the latter winter months, and in ſpring, to pervade, more or leſs, every ſhip in the fleet. The general concourſe of ſymptoms wsa uniform in every ſhip; it was almoſt impoſſible to miſtake the nature of the fever. Theſe ſhips had cruized with Sir A. Gardner the whole winter. The ſhort reſpite from ſea, while in Torbay, afforded little exemption from hard duty, from being conſtantly preparing to ſtart; and it ought to be mentioned, that at no period during the war, was the blockade of Breſt ſo complete in the winter ſeaſon, as under that valuable officer.

I have already given the hiſtory of typhus as it appeared on board the Captain, in October 1799. Mr. Farquhar, in his report for May 1800, ſays, that during the winter ſome typhoid caſes were conſtantly in his liſt, without ſhowing a diſpoſition to ſpread much; ſome caſes of dyſentery are alſo mentioned to have diſcovered themſelves. Twenty-five in both complaints are the number for May. Mr. Farquhar remarks, "Young marines, land-
"men, and boys not accuſtomed to the ſhip, have
"been moſt ſubject to it. The attack generally
"commenced with giddineſs, pain, ſickneſs, and
"oppreſſion about the ſtomach; great weakneſs
"and

" and depreſſion of ſpirits; ſmall frequent pulſe;
" the tongue at firſt moiſt and clean, and in many
" caſes continued ſo through the whole courſe of the
" diſeaſe. Theſe ſymptoms were followed by
" great anxiety and reſtleſſneſs; in ſome inſtances
" delirium took place on the ſecond day. Sore-
" neſs of the mouth and throat were very common
" at the commencement of the fever, but gene-
" rally diſappeared on the ſecond or third day. In
" one or two caſes, the whole inſide of the mouth,
" tongue, and throat, was much inflamed, and ap-
" peared as if the cuticle had been removed:
" the tonſils and ſalivary glands did not appear
" much affected. In ſome caſes, and particularly
" in a boy, who became delirious on the ſecond
" day, and died on the 5th, the heat of body,
" during the whole courſe of the fever, was con-
" ſiderably *under* the ſtandard of a perſon in
" health. In the ſpring of the year diarrhœas and
" pulmonic complaints were very frequent among
" the people, and reduced many of them to a ſtate
" of extreme debility. Theſe complaints fre-
" quently ſucceeded each other alternately in the
" ſame patient, and very often were combined
" with the fever prevailing in the ſhip.

" On the 9th inſtant, we had the misfortune to
" loſe two marines. One of them died on the 5th
" day of the fever, and had not been at ſea before
" the laſt cruize: the other had been long ſickly,
" was ſubject to ſevere head-achs, and conſtant
" hard dry nervous coughs. Some days before
" his death, a ſuppuration formed on his left
" temple, which gave exquiſite pain; his whole
" face ſwelled to an enormous ſize, he became
" quite frantic, afterwards comatoſe and inſen-
" ſible, in which ſtate he remained for twenty-four
" hours before he expired."

In the report for the ſucceeding month, Mr. Farquhar gives the following diſtinct teſtimony in favour of the *affuſion of cold water*, as recommended by the learned and accompliſhed Dr. Currie of Liverpool. " In ſeveral caſes of typhus " which have occurred this month, I have made " trial of the affuſion of cold water, and have " found it to anſwer my moſt ſanguine expectations, " particularly in two caſes, where delirium had " come on; and where, from the general debility, " frequency and irregularity of the pulſe, great " heat of ſkin, &c. I had little hopes of their re- " covery.

" The patients were put into a large tub, and " had a couple of bucketfuls of ſalt water poured " over them. The ſhock which they at firſt re- " ceived, appeared to be very ſevere, but the " advantage which they derived from it was ſo " great and manifeſt, even to themſelves, that " they willingly ſubmitted to its repetition next " morning. They are both at preſent convaleſ- " cent, and, I apprehend, out of all danger."

In the Cumberland, which ſhip had been but lately commiſſioned, Mr. Toſh generouſly complains for his people, in the following manner: " I attribute the prevalance of typhoid and catarr- " hal complaints, from the 22d of April to the " 22d of May, to the great indiſcretion of drench- " ing and ſoaking the decks with water; the " effects of which, not being felt ſooner were, " from the ſhip's company having lived well. A " nine weeks' cruize, ſince February off Uſhant, " thus rendered them more ſuſceptible of cold, " and prediſpoſed them to febrile indiſpoſition.

" All

" All remonſtrance and expoſtulation on my part, " againſt this injurious practice, had been in- " effectual."

This was, I believe, the only ſhip in the fleet where ſuch a cuſtom prevailed; it was very fair to conclude, that no health in cold weather could long withſtand ſo cruel and inconſiderate a practice. Two died, ſeventeen were ſent to the hoſpital, and thirteen recovered on board in typhus.

But while theſe fevers were increaſing in number, and admitted to be generated in the ſhips, in others contagion was diſtinctly traced to importation, by parties of raw men from guardſhips. The Royal William at Spithead, had uſually a ſhare in communicating diſeaſes of this kind. The Mars, the flag ſhip of R. A. Berkeley, was infected by men from the Royal William. The officers of that receiving ſhip denied the charge, till a fever had made ſuch progreſs as to make them ſend numbers to the hoſpital!

Mr. M'Lauglin of the Achille, alſo traces his diſeaſe to the Royal William, and much about the ſame period as the Mars. " I beg leave to ac- " quaint you, that a typhus fever began to make " its appearance among our people about the be- " ginning of May, which I am of opinion was " brought by ſupernumeraries from the Royal " William. I am happy to be able to inform " you, that we are at preſent (May 29th) free " from all ſickneſs. This ſpeedy extinction is, " no doubt, owing to the early and prompt ſepa- " ration from the ſhip of thoſe taken ill, and the " attention paid to cleanlineſs and ventilation." Such a ſpeedy extinction of infection could not fail to happen in a ſhip under the command of Captain George Murray. In this fever were ſeventy caſes,

twenty of whom were very ſevere, the others but ſlightly affected.

On board the Canada, the typhus appeared at ſea. Some malignant caſes were among the firſt affected, and the ſhip came to port on the 14th of May to land them. I examined theſe men, who had a very unpromiſing aſpect; eight were therefore ſent on ſhore to Plymouth hoſpital. Mr. Lind thus deſcribes its beginning and progreſs: "On the 25th of April this fever firſt broke out "in the Canada, which. from the ſimilarity of "ſymptoms in the different patients, and the "mode of attack, I had a right to conſider of an "infectious nature. I am further convinced of "this opinion from the firſt man taken ill, being "one of a draught received from the Cambridge, "about the time the Canada ſailed; this man's name "is John Creſſingham, and is at preſent a con-"valeſcent on board. The uſual ſymptoms on the "commencement of the diſeaſe are, a day or two "perhaps before they complain, a ſenſe of languor, "laſſitude, and lowneſs of ſpirits, ſucceeded by "cold chills, followed by a ſenſe of burning heat "over the whole body; great proſtration of "ſtrength, without any ſweating ſtage. Pulſe "always weak and frequent; pains of the back, "breaſt, and loins. At times ſome difficulty of "reſpiration, anxiety, and oppreſſion about the "*præcordia*, nauſea, and vomiting in ſome; livid "ſpots appeared about the breaſt in two caſes, on "the fourth day. One man died on the ſeventh "day of the fever, became delirious on the fifth, "and was covered with petechiæ.

"My

" My general treatment at firſt, was to have " them well waſhed and ſhifted. I uſed emetics, " antimonials, bliſters, opiates, ſaline draughts, " &c.; latterly I had recourſe to bark and red " wine. Early ſeparation was attended to as much " as circumſtances would permit."

It was expected after the eight bad caſes were moved, that little danger could be apprehended from any freſh attacks, as the mild weather was now ſet in. After going to ſea, others appeared, ſtill preſerving the typhoid type, but with more pulmonic affection, and ſtricture acroſs the breaſt. Three caſes died at ſea; and it was ſome weeks before the diſeaſe entirely vaniſhed. Mr. Andrew Baird, ſurgeon of the Ville de Paris, Mr. Lind reports, frequently viſited the Canada's ſick-berth. Mr. Baird in one of his viſits was reaſoning with Mr. Lind, from theſe pectoral and catarrhal ſymptoms, whether the fever could not be more ſafely treated by venæſection. One of the patients who was moſt affected in that way, was therefore raiſed in his hammock, for the purpoſe of being bled; but, as might have been expected, the ſick man was ſeized with *ſyncope*, and the new method of cure was abandoned.

Opinions ſimilar to that of Mr. Baird's, have been frequently met with in our attendance of the fleet. I have been conducted to a ſick-berth, with the expectation of viſiting caſes of peripneumony, but much diſappointed at finding the whole labouring under a ſevere typhus.

Pneumonic and catarrhal complaints are common in the Channel at all ſeaſons, but particularly towards ſpring and the beginning of ſummer. At theſe times they readily ingraft themſelves on typhus fever; together, they aſſume the marks of inflammation, particularly at the acceſſion, and

eſpecially during a hot fit. The fluſh on the cheek, redneſs of the eyes, and throbbing of the temporal arteries, give alſo the ſuſpicion of determination to the head, indicating phrenitis. But there are ſtill other ſymptoms to be taken into account, which ſhew the character of typhus. Theſe are, the extreme debility, the loſs of muſcular power, depreſſion of ſpirits, nervous affections, condition of the tongue and ſtomach; and, at the ſame time, that dejected appearance of the countenance, which can never eſcape the attentive and experienced obſerver.

Hear how bleeding has ſometimes been repeated in caſes of this kind: as the blood flows, the ſenſes decline, and the ſtricture at the breaſt is not felt for a time. But as the ſenſes return, ſo alſo the pain of the breaſt is again complained of. The pain diſappeared from venæſection before, and it is once more reſorted to. The patient again feels relief as the blood flows, from his ſenſes being impaired, but often expires while muttering expreſſions of eaſe from his mouth.

This is a period of the diſeaſe that calls for nice diſcrimination on the part of the ſurgeon: in the advanced ſtage the typhoid character becomes more diſtinctly marked.

In the Magnificent, ſome time about the end of April, typhous fever was obſerved, of which three died in the courſe of the cruize. Having miſlaid Wr. Veitch's firſt account of it, I muſt content myſelf with the following narrative, in his monthly return for June 1800. Mr. Veitch ſays, "I am "ſorry to obſerve, that three men have died of "fever during the laſt cruize. The fever noticed "in

" in my laſt report, from peculiar prediſpoſition " exiſting among ſome men, proved more diffuſive " than I at firſt imagined it would; but ſtill I cannot trace it ſatisfactorily to a contagious cauſe. " The ſymptoms evidently demonſtrated great " diminution of *excitement*; ſuch as, weak and " quick pulſe, attended with pain of the head and " between the ſhoulders; the ſecretions of the " mouth in a morbid ſtate; mild delirium in ſome, " while ſtupor, *ſubſultus tendinum*, and petechiæ " marked others. The free admiſſion of atmoſpheric air, with perfect cleanlineſs, antimonials, " cinchona, wine, opium, bliſters, the warm bath, " as an agreeable ſtimulus, and glyſters were employed on this occaſion, and varied in their " mode of application, according to the preſſure " of circumſtances, and period of the diſeaſe. " Might we expect advantages from electricity, " as a diffuſible ſtimulus, in any of the ſtages of " this diſeaſe?—The ſick-berth, from its proximity to the head, which affords a great quantity of ſulphurated hydrogen gas, is at times " very offenſive and diſagreeable; to obviate which, " I propoſed to Captain Bowater, to nail boards " on the ſeats on that ſide where the ſick-berth is " placed *.

" The further progreſs of this diſeaſe is now " arreſted, and this we owe to the ceſſation of " cold from the weather, a milder ſeaſon, no " dampneſs, fatigue or haraſſing duty; and, during the continuance of the fever, to the ſtrict " enforcement of cleanlineſs and ventilation, " without having recourſe to the diffuſion of the " *nitrous gas*."

* The Markham ſick-berth prevents all nuiſances of this kind.

Mr. Veitch adds, " I have found the *carbonated* " poultice of great uſe, in producing a favourable " diſcharge from vitiated ulcers: the *charcoal*, I " reduce to powder, and then mix it with the " poultice."

With reſpect to the query of this ingenious ſurgeon, concerning the uſe of electricity in typhus, I muſt anſwer, that great caution would be required in employing it. The condition of the patient, his quantity of, or degree of, excitability, muſt be conſidered, and nice diſcernment will be neceſſary in adjuſting the proportion of electric fluid to this ſtate of body. I ſhould think that the time of acceſſion, about the beginning of the rigours, would be the moſt proper for its trial. The firſt chills which uſher in the cold ſtage, if ſuch can be marked, is the fitteſt period for the employment of ſtimuli, to ſuppreſs the diſpoſition to febrile movements; as they proceed in ſucceſſion, and ſeem the conſequence of one another. We uſe wine, opium, and antimonials, with this intention, becauſe experience has inſtructed us to meaſure their quantity with greater exactneſs than we can ſome other ſtimuli. Even heat in low fevers is often miſapplied. Different fevers require different degrees of heat: in typhus it is wanted to ſupport the excitement; but you reduce it in fevers with increaſed action, in order to diminiſh excitement. Antimony, in the ſtate of an oxyd, has been long called a *febrifuge*, a term now baniſhed from medical language. But the preſent practice only preſcribes it as a ſtimulant, it is preferred, as in a conſiderable doſe, it excites vomiting; or by exciting the ſtomach, by ſmall doſes, from ſympathy, it acts alſo by relieving the ſkin, ſuſtaining excitement, and raiſing the powers of

of Nature, if I may ſo ſpeak; I mean nervous energy.

Yet, after all our knowledge which has been accumulated on this ſubject, I believe no medicine is more frequently exhibited with impropriety than antimony. The nauſea in the beginning of fever has been too much thought to depend either upon the quality or quantity of the contents of the ſtomach, while this ought to be referred to the ſtate of that organ itſelf. The excitability inherent in its coats, glands, muſcular fibres, and veſſels, if depreſſed from ſympathy with the whole nervous ſyſtem, muſt give that diſagreeable ſenſation which we call nauſea, whether it is empty or full, its contents acrid or otherwiſe. In this manner, tartarized antimony, antimonial powder, or James's powder have been repeated, till, by exceſſive ſtimulus, ſuch a degree of debility of ſtomach and inteſtines is produced that nothing afterwards can overcome. We thus hear of theſe *viſcera* becoming ſo irritable that no food or medicine will remain, and the patient ſinks as much from want of nouriſhment as from the diſeaſe, the palpable effect of an injudicious method of conducting the cure.

In the Royal George, about the beginning of May, a prevailing fever extended ſo rapidly that Lord St. Vincent thought proper to order that ſhip to remain in Torbay, for the purpoſe of accommodating the ſick and ſubduing the diſeaſe. On the 31ſt of May, I was favoured with the following account from Dr. Packwood, who was ſhortly after ſuperſeded by Dr. Felix; both of them men of liberal education, and of acknowledged

ledged abilities, whoſe long ſervices had afforded them much experience on the ſubject of Fever and Infection. Dr. Packwood ſays, " Having " long ſince expected to be ſuperſeded in this " ſhip, I had ſent my journal and papers to Portſ- " mouth with the reſt of my moveables; I am " thereby deprived of the opportunity of ſending " you any report for this month; a circumſtance " I the more regret, as a diſeaſe with which we " have been afflicted during that period, and " which has furniſhed myſelf much employment, " and afforded to others * much matter for ſpecu- " lation, would have been otherwiſe more parti- " cularly deſcribed to you.

" It began in a ſerjeant of marines while we " were at ſea; from him was communicated to a " private who ſlept near him; it then attacked " others of the marine corps, and at length the " ſeamen became equally ſubjected to it †.

" Its progreſs at firſt was ſlow, both in the " number taken ill, and in the ſeverity of the " ſymptoms; neither through its whole courſe, " (if we except two men ſent to the ſick quarters " at Dartmouth,) has it in any inſtance proved " fatal. Several who had apparently recovered have " relapſed; and the whole number ſeized is about " one hundred and ten. Of theſe fifteen have been " ſent to Haſlar or Dartmouth; thirty-two are " at this time ill on board, and the reſt (ſixty- " three) have returned to duty: but not one of " theſe, even now, is totally free from certain " ſigns of debility.

* Mr. Andrew Baird, ſurgeon of the Ville de Paris, who thought the diſeaſe was of a different kind.

† Theſe early caſes were kept on board contrary to the expreſſed opinion and wiſhes of Captain Domett, and the ſurgeon.

" Ten

"Ten days ago, we had more than ten ſeized "every twenty-four hours; that number has gra- "dually leſſened to four; and now we have not "above one additional caſe in ſuch a period of "time.

"As I had no doubt of its *typhous* nature from "the very beginning of its appearance in our firſt "patient, every precaution was early adopted to "prevent the extenſion of ſuch an evil; and from "the preſent ſtate of things you may judge of our "ſucceſs.—What a triumph this, for the advo- "cates of a *ſuppoſed deſtroyer* of Contagion, and "for D. C. S.! Unfortunately, however, for "them, ſuch fumigation has never been intro- "duced; and I think we have no cauſe to regret "its abſence. I had been told indeed that I muſt "not think of getting rid of our diſeaſe without "its employment; and I muſt perhaps acknow- "ledge, that I have herein been departing from "my *printed inſtructions*; but well convinced how "impoſſible it is for a phyſician to preſcribe for "his patients at a diſtance without error; and I "truſt you will not accuſe me of having abuſed "that portion of diſcretionary power, which muſt "be indiſpenſible to all in the ſituation of myſelf "and my brethren."

Dr. Packwood's concluding paragraph I ſhould conceive to be the ſentiments of all profeſſional men; and I firmly believe, that had thoſe phyſicians who have given this fume their official authority, ſeen a little more of naval ſervice than they have done, under the improved diſcipline of officers of the preſent day, they would not on ſuch grounds have conſented to its introduction, while other improvements of the firſt importance are ſuffered to fail. I beg my reader's pardon for this digreſſion;

digreſſion; I ſcarcely expected to ſtumble again on this magnificent quackery.

Dr. Felix joined the Royal George, on the ninth of June, and found thirty caſes of typhus, chiefly ſlight, in the Sick Liſt; and there occurred from that time to its extinction eighty-four, all of whom recovered. The number affected therefore amounts to one hundred and ninety-four in all; not great when it is conſidered that only fifteen were ſent out of the ſhip for cure; and the compliment of the Royal George being near nine hundred men.

Dr. Felix, in his report for June, thus expreſſes himſelf: "I incloſe a ſtate of health in the Royal "George from the time I joined her; by which "you will ſee, the diſeaſe that has prevailed for "ſome time paſt, if not extinguiſhed, is at leaſt "got under. Indeed, if any thing without ſepa-"ration can effectually eradicate any ſpecies of "contagion, the unremitted care and attention "of Captain Domett muſt accompliſh it*. And, "I truſt, in what concerns our department we "have not been wanting; at leaſt I ſhould not "be afraid of ſporting my Sick Berth againſt an "Hoſpital Ward. The ſeaſon of the year, and

* I do not quite agree with this excellent ſurgeon on his Sick Berth. Its internal economy was admirable; but the ſituation was bad. It was placed in the bay of the middle gun-deck. On this deck all the marines ſleep; and no perfect ſeparation can be preſerved under ſuch circumſtances, in the event of contagion breaking out. But how can ventilation be pure in ſuch a neighbourhood; the fore-ports muſt be ſhut at night, leſt the ſpray wet the deck; and if the door ſhould be opened, the air ruſhes in from the ſleeping place. Beſides, the Sick Berth has no communication with the air, by a ſky-light or wind ſail, as in the improved form under the fore-caſtle.

"the

" the weather in general, though we have had " ſome days of heavy fog, have been much in our " favour. The nature of the diſeaſe you are " neceſſarily in poſſeſſion of from Dr. Packwood, " and I ſhall therefore not trouble you at preſent " with any obſervation thereon, further than to " inform you that I have had the honour of one " viſit from Mr. Andrew Baird, ſurgeon of the " Ville de Paris.

" You will conclude from the return of the " Royal George, that recurring to the number " ſick, ſhe is, for her claſs, in a ſtate of health *; " and would certainly be conſidered ſo, if there " was not a prevailing diſeaſe ſtill evidently exiſt- " ing. And the only queſtion is, whether it is " dying a natural death, or whether, from the ſea- " ſon and exertions uſed, it is only ſmothered, " and will appear with the winter.——Circum- " ſtanced as we are, we can only perſevere in our " duty, and truſt the reſt to Heaven!"

Since the period mentioned, the Royal George has enjoyed the moſt perfect good health, and ſent as few men on ſhore for the year, as any ſhip in the fleet.

As a ſequel to the above narrative of the Royal George, I muſt here give an extract from a letter of Mr. Bell, ſurgeon of the Megæra fire-ſhip, which was employed to carry ſome of theſe men to Spithead. Mr. Bell ſays, " The fever which " happened on board on the twenty-third of May " laſt, originated from patients ſent herefrom " the Royal George and Achille, to be taken to " Haſlar hoſpital.

* The Doctor mentions ſix in his Report unfit for quarters after this ſevere ſickneſs.

" In

" In the beginning emetics, and gentle antimo-
" nials were given; afterwards ſaline draughts and
" camphorated julep: a remiſſion generally took
" place on the third or fourth day, when I gave
" bark and red wine in large doſes.

" As ſoon as the patients were able to ſit up,
" their beds were taken into the open air, ſpread
" abroad and ſhook, and their clothes waſhed.
" Hanging ſtoves were continually kept between
" decks *fore and aft:* every care and attention
" were taken to cleanſe and purify the ſhip, till the
" contagion was deſtroyed, and ſhe has been very
" healthy ever ſince. July 28th, 1800."

The Royal George bore the flag of Admiral Lord Bridport, and he had juſt left her as this contagious fever appeared. Had his Lordſhip remained in command but a few days longer, he would have ſeen proved among his ſuffering crew, whether an hoſpital ſhip could have given relief or not to a ſickly fleet; if not for the purpoſe of ſeparation, at leaſt for dietetic comforts with which the Meduſa was ſtored.

In the Atlas ſome caſes of conſiderable malignancy appeared, and threatened a very general infection, which early attracted Mr. Johnſton's attention. In his report for June he remarks, " The caſes of fever taken ill this month have
" been much more malignant than thoſe of the
" preceding month. For ſome days paſt there
" have been no freſh attacks; as the ſeaſon is
" now favourable, and great attention being paid
" to cleanlineſs and ventilation, I am in hopes we
" ſhall have no more trouble. Several of the

" men drafted out of different ſhips, tocomplete " the Atlas on her coming out of harbour in " May, have been very ill. But for the origin " of the fever we muſt look back to our old ſmall " hulk the Rippon, where I found patients afflicted " with fever, when I firſt joined the Atlas." This fever-liſt was twenty-five, and all cured within the month.

This remark of Mr. Johnſton's on the hulk, I know to be a very juſt one. When a ſhip goes into dock, or when in want of other repairs, the crew is lodged in an old hulk for the time, which is appropriated to that purpoſe. Theſe veſſels in the winter ſeaſon particularly, are the greateſt drawbacks on the health of a ſhip's company that I am acquainted with. They are not weather proof, therefore cold, leaky, filthy, and badly ventilated. But theſe imperfections become ſerious grievances, when the people of a firſt or ſecond rate, come to be confined in the hulk of a ſixty gun ſhip, like the Rippon. At this time alſo, ſome hundreds of women and children flock to the ſhips in harbour, and the crouded appearance of the decks, with the ſurrounding wretchedneſs of the whole apartments, exhibit a combination of every thing that is calculated to generate diſeaſe. The opportunities and means which the men now employ to procure the poiſonous ſpirituous liquors, which are vended in the naval ſea-ports, give the finiſhing ſtroke to this ghaſtly ſcene.

It may appear ſingular, that abuſes of this kind ſhould be allowed to tarniſh the naval diſcipline of the preſent day. The plain truth of the matter is, that the reſpective Captains, when ſhips are in dock, either live altogether on ſhore, or are abſent on leave for private buſineſs. They ſee nothing of what I am deſcribing; and it does not appear,

pear, that any of the port officers ever gave themselves the trouble on the ſubject *. This has not been my caſe; ſo far back as 1795, I made repreſentations to the Board of Admiralty, requeſting their attention to this long, but afflicting deſtruction of health, from the people being badly accommodated in hulks. On this occaſion, Mr. Secretary Nepean forgot his uſual punctuality, for I was never informed that my letter had been communicated to their Lordſhips, or whether they had given orders to the Navy Board to correct the grievance. As freſh inſtances of diſeaſe occurred from theſe cauſes, I have ſince repeated the remonſtrance, but with the ſame want of redreſs. One of theſe letters is preſented in this volume, as a juſtification of our meaſures in the eyes of thoſe who may, at ſome future period, be the miniſters of Health in the Channel ſtation. See the Occurrences for December, January, February, and March laſt, *and the Chapter on Ventilation* at the end.

On the ſubject of receiving men from the outports, whether ſeamen or landſmen, I have formerly offered my animadverſions. Repreſentations, remonſtrances, expoſtulations, have repeatedly followed one another, but followed in vain; the ſame rotine of cruelty, ignorance, and ſloth is permitted; and a future war may be begun before a ſingle ſtep is taken to correct meaſures, that above all others are the moſt prolific ſource of diſeaſe; but particularly to ſhips newly fitted, when men of every different deſcription are all at once mixed together, ſtrangers to their officers, and ſtrangers to one another. Newly raiſed men, whether volunteers or

* Captain Lane of the Cambridge, firſt looked into theſe veſſels in 1801.

impreſſed,

impreſſed, at the reſpective ports where they are enrolled, by what is called a regulating officer, a Captain or Lieutenant, are confined in tenders or other veſſels, till a ſufficient number is procured to fill the complement, when they are ſent by ſea to a King's port. The tenders are fitted with *preſs-rooms* for ſecurity, which are literally priſons, where air, ſo neceſſary to animal life, is almoſt excluded. His Majeſty's ſhips having marine centinels, can have no neceſſity for theſe cloſely built apartments: but from reaſons not eaſily to be reconciled to regular ſervice, a place of that deſcription is ſaid to have been found on board the Actæon guardſhip in the river Merſey at Liverpool. The remote ſituation of that commercial port, in time of war, has given it many advantages over others, in procuring ſeamen to navigate the merchant veſſels; theſe advantages have alſo been increaſed by the inattention of our regulating officers. A protection and ſecurity are here given to ſeamen on their return from foreign voyages, that cannot be done in any other ſea-port. It is within my own knowledge, that many hundreds of men occupied a village in the neighbourhood, which, from the vigilance to prevent a ſurprize, looked more like a military ſtation, than a reſort of thoughtleſs and diſſipated ſailors. In the beginning of 1783, when I was ſurgeon of a ſmall veſſel, one of the coaſting convoys, a detachment of officers and marines, were ſent in the night to impreſs as many of theſe ſeamen as could be taken; but their ſpies gave the alarm, and very few were brought to the ſhip. Lord Cranſtoun was there fitting out the Grampus, and from his great activity and zeal for his Majeſty's ſervice, completed a fifty gun ſhip, while a ſloop of war, commanded by a native of the town, lay unmanned. I remem-

ber that reſpected nobleman gave great umbrage to ſome of the rich merchants, who were ſhewing in one hand their advertiſements for bounty to encourage men to enter the navy, while with the other, they held the key that concealed them in their drawing-rooms.

Advantages of the kind juſt mentioned have therefore given to the trade of Liverpool, an aſcendancy over other places, becauſe their ſhips are manned with ſuch facility. I have remarked in my reſidence at Plymouth Dock, that a very ſmall proportion of men brought from the Merſey are able ſeamen, and new vigour muſt be infuſed into the regulating and impreſs ſervice at that port, before we can expect to ſee the due number of ſeamen brought from it. I ſhall by and bye have ſome woeful inſtances to detail in confirmation of what I have juſt now advanced.

In the ſpring of 1800, two ſloops of war, the Seagull and Renard, were ſent to Liverpool for men. The ſtate of the Seagull is thus mentioned by Mr. Robert Hood, a very reſpectable young ſurgeon, whoſe diſcernment and precautions on the occaſion do him great credit. "Having received from on board his Majeſty's ſhip Actæon "at Liverpool, one hundred and nine ſupernumeraries, to be brought round to the Cambridge "receiving ſhip at Plymouth by the Seagull, I "obſerved four of that number very ill; and ſoon, "upon examination, found them labouring under "typhus fever. They were immediately ſeparated "from the reſt of the crew, and had their hammocks hung up under the booms; and ſcreened "off in a proper way, to prevent, as much as "poſſible, the people having intercourſe with "them in any reſpect. Being five days in making our paſſage, and the weather keeping favour-

"able,

" able, I had the pleaſure to ſee theſe men " getting better. I gave them bark freely with " wine, of which they were allowed a pint a-day " per man: immediately on our arrival here, on " the 28th ultimo, they were ſent to the hoſpital.

" At this time our own people were all very " healthy, as I had not had a caſe of fever on " board for many months before. One man was " affected with a pulmonic complaint at this time; " but his cough having left him, I was induced to " give him ſome corroborants, as he was much " debilitated, and had loſt his appetite. But in " eight days time I had the happineſs of ſeeing him " perfectly well.

" Immediately on our arrival here, being ſuſ- " picious of *typhus contagion*, I pointed out to " Captain Lavie, who readily acquieſced with me, " to put in force all the neceſſary means to pre- " vent infection. For that purpoſe he imme- " diately cauſed the between decks, and all the " people's clothes to be well waſhed, and had " them particularly well dried and aired; ſo that " from no complaint appearing on board after- " wards, for eight days, I was much flattered " with the hopes of having eſcaped the baneful " contagion. But, to my great mortification, on " Monday morning laſt, I found four of my people " confined to their beds, ſeverely affected with " febrile ſymptoms. Each of them complained " of headach, diſagreeable taſte of the mouth, " nauſea, and vomiting, with ſpaſms of the in- " teſtines, and frequent cold ſhiverings, and all " the other uſual ſigns of typhous contagion. On " Monday evening each of them had an emetic, and " at bed-time an anodyne diaphoretic draught. On " Tueſday morning I found two more were affect- " ed, that had been ſeized in the preceding night:

" and on the Wedneſday morning five more were " affected, all of whom were ſent to the hoſpital. " On Thurſday morning I found five more that " had been taken ill in the night in the ſame man- " ner, and were ſent to the hoſpital. I find two " more complaining this evening which I have " alſo brought on ſhore.

" I have in all the caſes obſerved very early a " general languor and debility, with a ſudden de- " preſſion of ſpirits; and they all complain of " ſevere headach, with intolerable thirſt; their " tongues appearing much parched, and fauces un- " commonly foul, and of a yellow colour. The " pulſe in general very quick and ſmall; ſkin with " ſcarcely any moiſture upon it, and frequent " crimſon-coloured fluſhings in their faces; on " examining which, they ſay, that they have ſimi- " lar fluſhings, at times, in different parts of their " bodies, as well as their heads, which are, as " they generally deſcribe it, burning hot. I have " not in any one caſe obſerved petechiæ, or any " other ſymptom of early putridity."

The account ſent to me by Mr. P. M. ſurgeon of the Renard, is conveyed ſo little in the language and manner of a profeſſional character, that I muſt forbear copying it, and be content with what I obtained on my viſit to inſpect the ſhip. Indeed, I ſuſpect that this gentleman has not been educated in medicine, his letter differs ſo widely from any correſpondence I have had officially with ſurgeons.

The Renard received a draft of men from the Actæon, at the ſame time with the Seagull. I apprehended, from the deſcription given of them by Captain Spicer and his officers, that they had been kept a long time in the priſon of that ſhip, which it ſeems was in her orlop deck, while the ſhip's

ſhip's company lived above. This was done to prevent them from getting away; a ſingular kind of excuſe in one of his Majeſty's ſhips. They were all badly looking men, badly cloathed, and very filthy. It was not ſaid that any ſickneſs had been known among them. Nay, at the time that I was inveſtigating this prevailing ſickneſs, I was mortified by ſeeing in the newſpaper, an account of a ſplendid public breakfaſt, having been given on board the Actæon to a number of *faſhionables* at Liverpool!!!

On board the Renard, rather crouded with her own people, the accommodation for one hundred ſupernumeraries was bad indeed; nay, they had not room to extend themſelves. Many of them had no beds. The officers did every thing for their comfort in the paſſage; but in ſuch a ſituation it was impoſſible to preſerve their own people. They all ſickened after arriving at Plymouth, and one half the ſhip's company were ſent to the hoſpital, with ſymptoms reſembling thoſe deſcribed by Mr. Hood in the Seagull.

The uſual modes of purification were adopted in the Renard, as well as in the Seagull, with the addition of fumigation, to which proceſs Captain Spicer had been accuſtomed on ſimilar occurrences. Yet the people of the Seagull had fewer attacks than the Renard, and ſent a ſmaller number to the hoſpital.

Many of the ſupernumeraries, after being ſent on board the Cambridge, were taken ill, and ſent to the hoſpital. But notwithſtanding it was now ſummer, the ſeparation of freſh caſes did not ſubdue the diſeaſe. The fever appeared in the Immortalite frigate ſoon after. Mr. M'Cormick informs me, in the following month's report: "In "the beginning of June, this ſhip received a

" draught of new raiſed men, brought from Li-
" verpool by the Seagull; amongſt whom a
" typhus fever, but by no means of a malignant
" nature, made its appearance in a very few days.
" Every precaution was taken by the Captain and
" officers to prevent a diffuſion of the contagion,
" in which they happily ſucceeded; the new
" comers being the only ſufferers."

Mr. Adamſon of the Doris, at the ſame time, makes the following remark: " The caſe of fever
" ſent to the hoſpital, was a landſman who came
" in a draught from the Cambridge, and brought
" his diſorder with him, which was attended with
" bad ſymptoms; he was therefore ſeparated from
" the ſhip's company, to prevent infection being
" propagated." June 1800.

Had it been the beginning of winter, as it was that of ſummer, theſe fevers might have ſpread in the ſhips to which they were diſtributed, ſo as to endanger the health of the whole. Although the ſloops juſt mentioned, were the moſt improper ſhips for carrying ſupernumeraries, yet the Renard was ordered to Liverpool on the ſame duty. But Captain Spicer, with due regard to his Majeſty's ſervice, and the ſafety of his people, requeſted Dr. Currie to inſpect the ſupernumeraries, who objected to fifteen men, at that time labouring under a mild degree of typhus. Dr. Currie remarked, with great propriety, that a veſſel like the Renard, was badly calculated for that duty, and highly endangering the health of both officers and men. When the Renard came to Plymouth, four caſes of fever were landed from her; and, ſtrange to be told, ſhe was ſent a third time to Liverpool on the ſame ſervice.

Theſe inſtances of fever, are ſtrong facts in favour of the identity of contagion, whatever it may

may be. I employ the term contagion, as beſt ſuited to convey my meaning. Thus, we ſay nervous fluid, magnetic fluid, attraction of gravity, without attempting to explain the quality of theſe powers, as agents in the ſyſtem of the univerſe. We here ſee two ſloops in perfect order, receive each a body of men from a guardſhip, ſail at different times, and arrive one after the other, both affected by the ſame diſeaſe, and from ſimilar cauſes, without one having any knowledge what was the condition of the other; and all this in a ſeaſon very favourable to health. If further demonſtration was wanted, it is furniſhed from Mr. M'Cormick's report of the Immortalité, to which ſhip the diſeaſe was alſo communicated, and by Mr. Adamſon of the Doris.

About the beginning of July, there were ſcarcely any remains of theſe fevers in the fleet, an effect which we have uniformly obſerved from the ſummer heat. I attribute this to the grateful ſtimulus of a warm atmoſphere, that rouſes to action the powers of life, and ſeems, of all exciting means that act on the human body, the moſt ſalutary preventive and reſtorer of typhoid debility.

As the winter months advanced, no change was made in the diſpoſal of the fleet, excepting the Ville de Paris, which ſhip remained in Torbay, with Earl St. Vincent's flag, the whole were kept active at ſea.

The firſt fever which was met with in this ſeaſon was on board the Naiad, Captain Ricketts Jarvis. Mr. M'Arthur, in his report for December 1800, gives me the following account: "You "will obſerve by the above abſtract, that the

" ſmall-pox and typhus fever, have appeared on " board this ſhip, during the laſt month, and it " gives me much concern to remark, that two " men out of each complaint have died. I am " extremely ſorry that I was not able to procure " any *vaccine matter* before we ſailed from Ply- " mouth. It is however ſome conſolation to find, " that there are not more than ſix or ſeven " men on board who have not had the diſeaſe: " and ſhould it ſtill extend, notwithſtanding every " precaution taken to prevent communication " with the ſhip's company, I have ſome thought " of inoculating the reſt: the ſmall-pox at pre- " ſent on the liſt are of the diſtinct kind, and in " every reſpect favourable.

" The fever has aſſumed the worſt form of " typhus. It commenced in its uſual inſidious " manner, with ſlight headach, cold ſhivering, " pain of the back and loins, even accompanied " with ſome cough; on the ſecond, third, or " fourth day, a ſudden exhauſtion of ſtrength " took place; the tongue, and round the teeth, " were covered with a kind of adheſive ſaliva, " which ſoon formed a dry black fur, delirium ap- " peared, and increaſed, ending in ſtupor, with " difficult reſpiration, and involuntary diſcharge " of fœces and urine, in the caſes that proved fatal " on the 7th and 14th day of the fever.

" Captain Rickett's has beſtowed the utmoſt " attention to every means that are calculated to " deſtroy the contagion, or any way conduce to " the health of the people. Every attention has " alſo been directed to the perſonal cleanlineſs of " the men; ventilation, dryneſs, and cleanlineſs " of the ſhip. Stoves are conſtantly kept burn- " ing below, in the between decks, tiers and " cockpits, all of which have been white-waſhed,

" and

" and frequently ſtrewed with lime. But from " the ſtate of the weather ſince we have been at " ſea, it has been impoſſible to keep the decks " completely dry; nor have we had for the laſt " month, above a day or two proper for airing or " drying the people's clothes. I have however " every reaſon to expect that, from the ſtrict pre- " cautions taken of preventing communication " with thoſe in health, the fever will ſoon be ſub- " dued, and that the ſmall-pox will not extend " farther. The ſick have been ſeparated as early " as poſſible, and the clothes and bedding of ſuch " as have died, have been deſtroyed.

" Both diſeaſes were introduced to this ſhip by " a draft of men from the Cambridge, which we " received on the 13th of December. Next " morning ſome of them complained of cold " ſhivering, headach, nauſea, pains of the back, " loins, and extremities, with ſome cough reſem- " bling catarrh. We ſailed on the 15th from " Plymouth, and on the 17th the variolous erup- " tion appeared on one of them, while two others " exhibited every ſymptom of typhus, of which " they have ſince died. It appears that numbers " of theſe men had been preſſed at Briſtol, and " had come round to Plymouth in the Union ten- " der, about the latter end of November. They " ſtate, that ſome men were ſent from the tender " with fever, before they left Briſtol; that on their " arrival at Plymouth, ſome were ſent to the hoſ- " pital from the Mermaid ſlop-ſhip, and others " from the Cambridge; and that a man and boy " with ſmall-pox, were ſent from the latter ſhip, " a few days previous to their coming here. It " is therefore evident, that the contagions were " lurking about them, if not in a ſtate of activity " when they joined the Naiad.

" The

" The fever has been hitherto entirely confined " to the new men: but two of the old ship's com- " pany have been attacked with the small-pox. " The fever is at present (January 11th) assum- " ing a much milder form than it had at its " commencement; and in a number of instances " it has been checked in its formation, by the " early use of very gentle emetics, opening the " bowels, inducing a free perspiration, and giv- " ing large doses of bark the moment a remission " appears.

" February 11th. In last month's report, I ac- " quainted you that typhus fever, and the small-pox " had been introduced into this ship by a draft " of men from the Cambridge. I then enter- " tained hopes, from the excellent œconomy esta- " blished on board by Captain Ricketts, that the " fever would soon disappear; and I am happy to " state, that this has been accomplished even at " sea. You will observe by the abstract, that " two men died of fever during the month; one " of these was a young gentleman about eighteen " years of age, who had not been at sea before. " He had been excessively ill of sea-sickness for " four or five weeks; his stomach was in a very " irritable state, and was considerably reduced in " strength before he was attacked with sea-sick- " ness. The other had been a constant sentinel " in the sick-berth.

" The weather last month had been very un- " favourable for destroying the typhous contagion. " In this month (between the Lat. of 42° and 44°.) " the weather was more temperate and dry. Every " means before employed in ventilating, drying, " and cleaning the ship, with attention to personal " cleanliness, and comfort of the people, &c. " were persisted in: the fever gradually assumed a

" milder

" milder form, and finally diſappeared. We have " a conſiderable number of catarrhal complaints " on board, ſometimes attended with ſymptoms " of pneumonia.—As typhus fever had been ſo " recently in the ſhip, I ſent three of the worſt " caſes of catarrh, of whom I was rather ſuſpi- " cious, to the hoſpital.——During our ſhort ſtay " in Torbay, we were liberally ſupplied with freſh " beef and turnips, by order of Earl St. Vincent, " which have been of great uſe in recruiting the " ſtrength of our people. At preſent the catarrh " is very much on the decline; and I truſt it will " not be increaſed by the prevailing ſevere eaſterly " winds.—The laſt caſes of the ſmall-pox have " been very favourable; and as there was no " communication between them and the ſhip's " company, until they received new clothes and " bedding, I hope it is all rooted out. We have " now only three who have not had that diſeaſe, " and I ſhall inoculate them the moment I can " procure *vaccine matter*."

In this minute and intereſting narrative of Mr. M'Arthur, we have an excellent example of what can be accompliſhed by a diſcerning and intelligent ſurgeon, when ſupported in his meaſures by active and judicious officers. We here obſerve an inſtance of imported infection among raw men, whoſe condition would naturally attract the vigilance of a ſurgeon fully inſtructed in the knowledge of his profeſſion, detected at once, and due precaution for the ſafety of others, by his recommendation immediately adopted by the executive officers of the Naiad. And they find their labours rewarded, even while the elements were oppoſing the means in a diſeaſe that threateend great mortality, four having died of typhus; and fortunately it did not extend beyond the new comers.

In

In occurrences of this nature the value of the medical character becomes conſpicuous; if the ſurgeon of the ſhip has taken care to inform himſelf thoroughly in the ſtudies of his profeſſion it cannot eſcape the obſervation of officers, and even a ſhip's company. By theſe means he will receive from his own reflections thoſe conſolations which nothing elſe can beſtow; and from his officers and people that gratitude and attachment which repay him for the ſevere labour of ſtoring his mind with uſeful knowledge. On the contrary, can there be any thing ſo humiliating, even to a man of common feeling, as to find, when it is too late, that his cold indifference, his neglect and diſlike to the duties of his office, have permitted a dangerous diſeaſe to ſpread among the crew; and at laſt, when detected by the ſuperior diſcernment and humanity of others, he is incapable, from his ignorance of the principles and practice of medicine, to direct the method of cure; and if he interferes at all in the treatment of his patients, his blunders either ſubject them to unneceſſary torture, or bring them to a premature death.

In the courſe of the winter, three ſhips of the line, the Glory, Edgar, and Magnificent, ſuffered conſiderably from low fevers, appearing while the crews lived in the hulks; partly from theſe damp and filthy lodgings, partly from the exceſſes committed on ſhore, or from ſpirituous liquors brought on board; and probably alſo from infection acquired in the polluted houſes and beds, which had been opened as gin-ſhops in Plymouth Dock.

The Glory ſent in three months eighty people to the hoſpital, yet I was not furniſhed with a ſingle remark from this ſhip on ſo general a ſickneſs. Some caſes which I inſpected myſelf, there were every reaſon to conſider as fevers produced by

by prevailing infection. Our records of the ſtate of the fleet for the war, will ſerve as teſtimonies to the medical world, that a large portion of navy ſurgeons have been induſtriouſly employed in ſelecting facts and hiſtories, which always implies a deſire for improvement worthy of the ſcience of medicine.

In my firſt Volume, I conſidered the effects of drunkenneſs, as prediſpoſing the body to receive infection. The ſubject is one of moſt ſerious import in a ſea-life, in both a moral and phyſical view; alike intereſting to an officer and ſurgeon. What avail my ſpeculations on diſeaſes, or an inveſtigation of their remote cauſes, if they are not prevented and removed. During my reſidence at Plymouth Dock, I was witneſs to the opening of two hundred public houſes, in addition to thoſe opened before, in the ſpace of a few months. It may be ſaid, 'what is all this to you; you are 'neither regulator of police, or accuſer-general?' Certainly I profeſſed neither; and it might belong more to the commanding officer of the port, or to the Governor of the garriſon than to me, to impeach a breach of order in the civil magiſtracy. But I did not come within the claſs of informers, nor did I ſtep beyond the duties of my office or profeſſion, in the manner in which my ſentiments were conveyed to the Board of Admiralty on the the ſubject. As a proof of this, their Lordſhips thought well of my repreſentation, tranſmitted my letters to the Secretary of State for the Home Department, and added their requeſt to the Duke of Portland to prevent the abuſes of which I complained.

The ſubject of my letters was of ſuch a nature, though only intended for the doctrine of health, that

that it was almoſt impoſſible to ſeparate it from ſome points of police. The dreadful conſequences of a licentious ſpirit being ſpread among ſeamen were exemplified a few years ago in the navy. The Secret Committee of both Houſes of Parliament, in 1801, unfolded treaſonable aſſemblies, and Mr. Addington ſaid in the Houſe of Commons, that attempts were making to diſaffect the men in our ſhips. If ſuch attempts could be made at all, they could be nowhere ſo ſucceſsfully done, as in the new public houſes at Plymouth Dock. The whole Channel fleet was paid wages and refitted there. It is next to impoſſible that two hundred gin-ſhops added to the former, many of theſe kept by men whoſe characters the magiſtrates had taken no trouble to know, for the licence to each houſe had been obtained to ſerve different brewers, whoſe ale they were to vend, I ſay it was impoſſible that ſuch things could be done in a naval ſea-port without affecting the public ſervice. It was not long after that a gang of houſe-breakers were found there, with a publican at their head, ſome of whom belonged to King's ſhips; and I have ſtood at the windows of my own lodging, and ſeen a cart-load of King's ſtores ſeized in the houſe of another. So far I am juſtified on the ſcore of police.

There is no human being, in his hours of diſſipation and pleaſure, that ſo much needs the protection of a Government, as a Britiſh ſeaman. If therefore he ſhould fall among thieves, and the *Prieſt* and the *Levite* paſs by without noticing him; but if no *good Samaritan* ſhould come that way, the phyſician of the fleet may be allowed to contribute to his ſafety, to "*bind up his wounds, and to ſet* "*him on his beaſt.*"

But to return to our ſubject: Mr. M'Laughlin of the Achille, in his report of the twenty-fifth of February 1801, having arrived from ſea remarks, "It is with infinite regret that I acquaint you that "our people have experienced a ſad reverſe of "health, ſince I had the pleaſure of ſeeing you "laſt. Pleuritis and pneumonia, combined with "typhus, have been the prevailing complaints; "and, I am ſorry to add, five have died during "the cruize.

"The inflammatory ſymptoms run very high "in a few; where repeated large bleedings were "found neceſſary; but the debility which in ge- "neral prevailed, exceeded any thing I have ever "witneſſed. Where copious and free expectora- "tion came on early, the recovery was in pro- "portion ſoon; but has been very tedious in "many. We had ſeveral relapſes from the bad- "neſs of the weather, which indeed has been very "unfavourable to our endeavours; it being a "ſeries of violent gales, conſtantly accompanied "with thick fog, rain, or ſleet, with the excep- "tion of three or four days froſt; during the froſt "it blew hard from N. E. It is needleſs for me "to deſcribe our diſtreſs from ſuch a ſtate of the "elements; with, from fifty to ſixty men confined "to bed at a time, and not a ſpot in the ſhip "dry. The Achille is extremely leaky in all "parts, notwithſtanding the ſhip was caulked "when laſt in port. At that time our people "were much expoſed to the weather and ha- "raſſed. On going to ſea, the latter end of laſt "month, the ſhip's company, who were all the "ſummer accuſtomed to three watches, were "ſuddenly changed to two; which circumſtance, "added to the pernicious practice of lying about "the wet decks at night, I conceive to have

"operated

" operated in no ſmall degree as a prediſpoſing " cauſe of their illneſs; and in many I am certain " the latter was the immediate cauſe; every pains " have however been taken to prevent the ſleep- " ing on deck."

On the arrival of the Achille in port I viſited her; and the remains of the diſeaſe in the Sick Berth were evidently typhus. It muſt be a very rare occurrence indeed in a ſhip under the circumſtances of the Achille, to have two diſeaſes on board at once, of ſuch oppoſite natures, as pneumonia and typhus. The long-continued operation of debilitating powers on the crew, ſufficiently appears from Mr. M'Laughlin's narrative, which exactly correſponds with the whole ſurgeons of the fleet. When in Torbay, in winter, the watering-duty became an additional fatigue; and no reſpite was given to it, in the ſevereſt weather. To theſe cauſes may be added, the effect of the lemon-juice, that from an article of medicine, was moſt injudiciouſly converted into a part of diet, mixed with water, and called ſherbet. Among men liable to theſe cauſes, it becomes a matter of nice practice to draw blood; for if ſigns of inflammation appear, they can at beſt be very tranſitory, and the propriety of V. S. is at once queſtionable, from the ſucceeding debility being ſo great. Ninety caſes of fever happened at this time.

Mr. M'Laughlin mentions no ſuſpicion of imported contagion; but it appears that a draft of men, paſſengers in Achille, brought the fever to the Mars, ſome of whom had the diſeaſe upon them when they came on board. This fever extended to others near them, and infected the attendants of the ſick, of which ſeveral died, and others, though convaleſcent, were reduced to the laſt degree of weakneſs when the Mars came to port.

port. (Vide the Abſtract of Health.) Ten of theſe men were ſent to the hoſpital; one of whom, from his apparent danger, I adviſed not to go; he wiſhed to be ſent on ſhore, and died in the boat.

The men that infected theſe ſhips were, it ſeems, part of the ſame tender's complement that tainted the Naiad, and came from the Cambridge to fill vacancies, badly clothed and fitted out for ſea at ſuch a ſeaſon of the year. In the Mars this fever ſpread to upwards of ſixty, and five deaths happened before its final extinction. The means uſed in both ſhips were nearly alike; perſonal cleanlineſs, and clean clothing, warmth and dryneſs in the ſhip, with pure ventilation and white-waſhing: to theſe may be added, early ſeparation of the diſeaſed, and all communication ſtrictly forbidden.

When fevers prevail in different ſhips, that have originally ſprung from the ſame ſource of infection, as in the Achille and Mars, they preſerve their primitive character. The pectoral ſymptoms which made Mr. M'Laughlin try bleeding, alſo urged Mr. Blair to uſe the lancet, againſt his inclination, in one caſe; and though the quantity of blood taken ſcarcely exceeded four ounces, the patient ſunk under it. The whole of Mr. Blair's patients ſhowed uncommon affection of the breaſt; not *determination*, as ſome would expreſs it, for that is a term that has been uſually applied to the inflammation of thoracic viſcera; a greater quantity of blood being determined there. The winter and vernal typhus in the Channel is generally attended with either catarrhal or pneumonic ſymptoms, or both; and are apt to miſlead the inexperienced.

In the beginning of April 1801, a typhus appeared in the Princeſs Royal, the flag-ſhip of Rear Admiral Sir Eraſmus Gower; and diſtinctly traced by the learned ſurgeon of that ſhip, to raw boys ſent from the Cambridge, that had lately come in tenders, &c. from Liverpool and Briſtol. Fevers, ſpread from this ſource, were in thoſe months extending through a number of ſhips, and attended by a conſiderable mortality. In ſhort, nothing but the utmoſt exertions of officers prevented one half of the fleet from being diſabled by ſickneſs. This conduct in port-duty is unpardonable.

Thoſe times of ſcarcity and dearneſs of proviſion in 1800 and 1801, have had their ſhare in generating and extending fevers of the typhoid kind among the poor. We have obſerved numbers of men brought from the out-ports in tenders, who ſeem to have entered into the navy to prevent themſelves from ſtarving; many of theſe have been invalided at Plymouth hoſpital, as unfit objects for his Majeſty's ſervice. Remonſtrances were alſo made to the Admiralty on the impropriety of receiving ſuch men by the regulating officers at the out-ports, whoſe conduct had been highly reprehenſible. Depreſſed in mind by their diſtreſſes, worn down by poverty and want of food, and half naked, theſe unfortunate beings had been crouded into the dark and confined decks of tenders, many of them unprovided with beds, and forced to ſleep on wet or damp boards, and had in this manner been ſent round to Plymouth. Such is the deſcription of a great number of landmen, who arrived in Hamoaze in the winter and ſpring of 1801, in different tenders; and who, from the nature of their confinement, could not fail to become

come diſeaſed. In this manner every tender brought with it a *freſh ſtock* of infection. Theſe miſerable and half-fed beings, anſwered to Shakeſpear's ludicrous deſcription of a diſeaſed army: "*Half of them dare not ſhake the ſnow from off their* "*caſſocks, leſt they ſhake themſelves to pieces.*"— With ſuch frail materials were our ſhips recruited at this period of the war.

Into whatever ſhip theſe men were diſtributed, they carried with them the ſeeds of diſeaſe, became firſt ſick themſelves, and then ſpread it to thoſe near them, and moſt ſuſceptible of its influence. The Orion, juſt commiſſioned, was fitting at this time, and before ſhe was ready for ſea, ſent upwards of one hundred men to the hoſpital, chiefly ill of fevers, and in all the variety of wretchedneſs.

But the infection in the *Orion* did not ſtop here; as ſoon as ſhe put to ſea in April, it made conſiderable progreſs, and ſeized a number of the ſeamen. Five deaths happened at ſea. The debilitating effects of this fever, paved the way for a very general diſpoſition to ſcurvy, which prevailed in July and Auguſt, in which months Mr. Allen admitted forty-one ſevere caſes into his liſt, who were unable to move about the decks. Yet all this happened while the lemon-juice, according to Lord St. Vincent's preſcription, was daily iſſued to the ſhips' company; in the ſummer ſeaſon too, and when large quantities of freſh fiſh were caught by the people. (Vide the Article Scurvy.) Some ſlight remains of this typhus, blended with pulmonic complaints, continued till the beginning of September; but Mr. Allen perceiving the immediate debility, very wiſely abſtained from V. S. and found advantage from a nouriſhing and ſtimu-

lant mode, as far as a ſcanty ſupply of good things would admit.

The Majeſtic, another ſhip of the line, had not much ſickneſs while fitting in harbour, the ſeaſon being then much advanced, but this ſhip was no ſooner at ſea, than a typhus appeared, and ſpread with haſty ſtrides among the crew, of whom thirteen died. But ſo many in a dangerous ſtate remained in the liſt, that the commander in chief thought proper to order her to Torbay, where ſhe landed fifty people at Mr. Ball's hoſpital *. To ſuch a degree did contagion extend from careleſſneſs in the regulating and port duty: it is painful to record enormities, that might have been ſo eaſily forſeen and prevented.—

But to return to Mr. Lara of the Princeſs Royal: in the report for April he thus deſcribes the prevailing fever: "The fever which has pre-
"vailed for this month was 'typhus.' Its firſt
"appearance was on the ſecond of April. We
"had been three days from Torbay; from that
"period to the ſixteenth, freſh caſes were daily
"added to the liſt; the ſevere ſymptoms that
"characterized the majority of them threatened
"a greater mortality than has occurred. Of the
"ſeven patients who ſunk under the diſeaſe, one
"was on the ſecond day from the attack; two on
"the ſixth day; two on the fifth day; one on the
"12th day, and one on the 8th day. They were
"all young men, the oldeſt not thirty years of
"age.

* Six of theſe people died on ſhore. Mr. Ball, and others, were infected from them, and had the diſeaſe in a ſevere degree. Mr. Stephenſon of Haſlar hoſpital was ordered to take Mr. Ball's duty for ſome time, and ſaw the hoſpital at Peington cleared before he left it.

" To the indefatigable exertions of the officers, " in enforcing, and ready acquiescence to my " suggestions, for forming and maintaining a com- " plete separation, and other points of medical " discipline, may be attributed the early check " to the progress and final termination of this " fever.

" I have, over one column, used Dr. Darwin's " term '*inirritative debility*,' to express a state of " disease exhibiting a disposition to typhus; all " the patients so affected were, during the preva- " lence of the fever.

" The first case of measles appeared on the " seventeenth, and the last on the 21st. I think " both the typhus and the measles were received " from the Cambridge."

The typhoid patients of both the above descriptions for the month, amounted to seventy-five. The term borrowed from Zoonomia, is very expressive of typhoid debility, when the disposition to fever is only marked by mild symptoms; as always happens in the decline of a prevailing contagion.

In the report for May, Mr. Lara observes, " The fever we have to notice this month assumed " the character of typhus in its progress; but the " symptoms it exhibited were those of catarrh, " cough, running from the eyes and nose, &c.; " which in the majority of cases lasted for two " days; between that and the fourth day there " was a declension of arterial and muscular " strength. In five cases there were, on the third " day in the evening, a determination to the " brain, marked by delirium and flushing of the " countenance. Two of these proved fatal. In " one case, (and only one, either this or last

" month,) the *globus hyſtericus* was very diſtreſſ-
" ing; and death enſued ſix hours after it had
" ſubſided.

" The firſt caſe which occurred this month was
" on the third, a period of nearly three weeks
" from the former appearance of fever. The
" marines were firſt affected this month; and of
" the fifteen patients there were only five ſeamen;
" two of whom died; but one of them ſeemed to
" ſink more from mental affliction than bodily
" diſeaſe. The laſt remaining caſe now on the
" liſt offers no indication of danger.

" The prophylactic means employed againſt
" the fever were, ſeparation of the ſick; cleanli-
" neſs of the body and clothing; and the air of
" the ſick-berth kept as pure and dry as the means
" we poſſeſſed would admit.

" Every perſon taken ill was ſtripped and
" waſhed; had a clean ſhirt and night-cap; clean
" ſheets alſo were put to his bed: the clothes
" taken off were waſhed and dried.

" No recovered perſon returned to his berth
" without being waſhed, and his clothes tho-
" roughly changed; and thoſe taken off were
" waſhed and dried previous to their being re-
" turned to his bag. The blankets alſo were
" waſhed, and in ſome inſtances thrown over-
" board.

" The beds, &c. were aired as often as the
" weather would permit: any patient capable of
" ſitting up half an hour during the day, had his
" bed, &c. on the booms for that time.

" The practice followed varied according to
" circumſtances ariſing in the progreſs of the diſ-
" eaſe. But on the firſt attack an emetic was given,
" and a ſtool procured; antimonials were after-
" wards

" wards given, with or without opium, agreeably " to ſymptoms, and in few caſes continued beyond " the third day.

" Wine was freely uſed where it did not occa- " ſion fluſhing of the face. In theſe caſes ſmall " doſes of opium alone, or variouſly combined, " were ſometimes employed; but the moſt grate- " ful, powerful, and effective medicine was vitri- " olic æther.

" In the more fixed pains about the breaſt and " head, without watching, delirium, or ſtupor, " bliſters were of very evident advantage; other- " wiſe I did not find them of much, if of any " benefit. In the delirium, with fluſhing of the " face, the head was ſhaved, and cold water ap- " plied with unequivocal good effect. Where the " delirium was low, and no fluſhing of the face, " the head was fomented with warm water; and a " bliſter applied, in two caſes out of three, with " ſome advantage.

" In one caſe of low delirium, with watching, " opium, wine, and æther, however combined, " were rejected, as well as every article of diet, " the tincture of opium was rubbed along the " ſpine, in the proportion of a drachm, every " four hours; and, on the third application, ſleep " enſued for nine hours. The pulſe roſe, he took " nouriſhment, and recovered more than uſually " rapid. In two other caſes the ſame plan was " purſued without effect.

" The boys received from the Cambridge were, " without exception, all badly clothed; and moſt " of them were without beds."

It appears from a ſucceeding report, that one fever patient died in the beginning of June, but that ſeven others of that month ſcarcely deſerve to be claſſed, they recovered ſo ſoon.

In July eight cases appeared, four with severe symptoms; and perhaps the state of weather had some share in reviving the seemingly extinguished fever. Mr. Lara says, "I regret to notice that "the hopes I was influenced to express of the "typhus infection being anninilated have not "been realized. It is however gratifying to re- "mark, that though four cases exhibited the most "unfavourable appearances, *all* have terminated "happily. I think I am indebted in a conside- "rable degree to the use of *cold ablution* for these "pleasing results. I have no doubt but its early "use subdued those affections which might other- "wise have produced a formidable disease. It was "my wish to employ the cold affusion, but the "prejudices by which it was opposed were unsur- "mountable."

Straggling cases, such as Mr. Lara met with, frequently follow a general infection, without much hazard, if due attention is paid, to revive the disease. Cold ablution (Vol. I.), as tried by Mr. Lara, I have always found beneficial; I only wish it was more generally employed, for it can be done in all stages of typhus, and in both the mild and malignant form.

In this sketch we observe, that an interval of three weeks happened at one time, viz. between the sixteenth of April and the third of May, without any cases of fever appearing. A prevailing infection will sometimes be suspended in a ship in this manner, and acquire considerable activity again from particular causes. Mr. Lara takes no notice of the state of the weather, and probably fogs, rains, or easterly winds, severe labour, &c. might have a share in reviving the half-extinguished contagion, by creating predisposition of body to receive it.

We

We alſo perceive from this narrative, the aſſimilation of catarrhal ſymptoms, with a typhoid type of fever; which are engrafted upon it, but do not alter its character.

The arrangements directed in the Princeſs Royal to ſubdue the progreſs of this fever, without moving the infected out of the ſhip, muſt have been conducted with conſiderable addreſs; as in fourteen days, from a very alarming beginning, and mortal in its nature, it was got under. It muſt be of infinite benefit to the naval ſervice of this country, to infuſe theſe maſterly forms of prevention into the ſyſtem of diſcipline in ſhips; for the defection of men in ſending ſick to hoſpitals, is one of the greateſt evils we know.

A ſimilar fever prevailed in the Robuſt in the month of March, ſhortly after leaving port; of which eight died. The ſhip at this time was one of the blockading ſquadron off Rochford, under Sir E. Pellew, and continued at ſea the whole of this prevailing ſickneſs. Mr. Chivers gives the following account of its beginning, progreſs, and termination in ſixty-one caſes.—Fourteen caſes of intermittent fever are alſo mentioned at this period; and moſt probably ſprung from the typhoid infection. Such intermiſſions and remiſſions generally appear towards the decline of the contagion, and give us hopes that it will ſpeedily be extinguiſhed. They here act like monitors, and encourage us, under ſevere viſitations of ſickneſs, to perſevere in our means of prevention and purification.

" I am much concerned to give you ſo unfa-
" vourable a report as the preſent, of the ſtate of
" health

" health on board his Majeſty's ſhip Robuſt, for " the laſt four months.

" You will obſerve, that our loſs, and principal " number of ſick, have been from typhus fever, " which made its appearance here about the " fifteenth of March; three weeks ſubſequent to " our ſailing from Cawſand Bay to join the Channel " fleet. The weather, for a fortnight previous to " the commencement of this diſeaſe, had been rainy " and boiſterous; conſequently, during the moſt " of that time, the lower deck was badly ſupplied " with air, the ports being almoſt conſtantly ſhut. " This, in all probability, increaſed the virulence " of the exciting cauſe, and brought into action " ſeeds of contagion that had been hanging about " the ſhip ſome time.

" I have no doubt as to the mode by which " infection has been communicated; namely, " through the perſons or clothes of men who " joined us while refitting. But as they came " from different quarters, and are alike ſubject to " ſuſpicion, I will merely ſtate the circumſtances, " and leave you to judge as to the moſt probable " channel by which it was introduced.—The ſub- " jects who firſt attracted my attention, were ſome " men who entered for the ſhip from Mill Priſon. " They were badly clothed, and dirty in their " perſons; which rendered them likely objects for " conveying diſeaſe; particularly as one of them " ſaid he had been ill in the hoſpital with fever " but a ſhort time before. This I ſhould not " have heſitated in conſidering as the cauſe; but " underſtanding ſhortly after, that a ſimilar ma- " lady exiſted in other ſhips of the fleet, ſaid to " have been traced to the Cambridge, this ap- " peared as likely a channel as the former, having

" ſome

" ſome of our carpenter's crew, and other two men
" while in harbour, in that ſhip.

" I muſt confeſs, in the firſt inſtance, I did not
" ſuſpect the diſeaſe to be of an infectious nature,
" not immediately recollecting the cauſes which
" it appears ſince to have originated from. And
" the ſymptoms indicating more of an inflamma-
" tory diſpoſition than otherwiſe, tended further
" to prevent the idea of typhus. However, in a
" ſhort time, it aſſumed a very different form,
" putting on decidedly the typhoid type, without
" any particular affection of the pulmonary organs,
" except that which ſo often attends this fever, a
" ſenſe of ſtricture acroſs the breaſt.

" There were evidently in the firſt caſes that
" applied, every appearance of local inflamma-
" tion of the cheſt, as they complained of ſevere
" pain in the breaſt or ſide, laborious reſpiration,
" and diſtreſſing cough, attended with expectora-
" tion of mucus, headach, and thirſt: the pulſe
" was generally hard and quick, tongue white:
" theſe induced me to bleed at the commence-
" ment, to raiſe a diaphoreſis by antimonials, and
" to apply a bliſter over the ſeat of the pain. This
" treatment ſucceeded with two of the four, and
" would in all probability with the reſt, had they
" not allowed the diſeaſe to increaſe conſiderably
" before they applied. All thoſe who followed,
" as I before obſerved, were of the genuine
" typhous caſt, conſequently indicated a different
" treatment.

" When they firſt complained, an emetic was
" adminiſtered, which ſometimes operated by
" ſtool; if not, a laxative was given, as ſoon as
" convenient after. Where great heat, accom-
" panied with thirſt exiſted, I gave aq. ammon.
" acetat.

" acetat. or ſaline mixture ſucceeded in opening " the ſkin, and producing an alleviation of the " febrile ſymptoms. Theſe were followed by the " camphorated mixture, opium, and wine occa- " ſionally, as the urgency of the caſe required, " paying attention, at the ſame time, to the ſtate " of the bowels. Delirium was very violent in " ſome caſes, requiring the utmoſt attention to " prevent them from running about the ſhip. Se- " veral who were attacked by this diſeaſe, ſaid " they were conſcious of receiving the infection " from their meſſmates, or people that ſlept " in the ſame *longer*, or row of ſlung hammocks.

" The means uſed to *prevent* its further influence " on the ſhip's company were, by ſeparating, as " much as poſſible, the ſick from thoſe in health, " ſtripping them on their firſt application, and waſh- " ing every article belonging to them, even to their " bedding, blankets, and jackets. When a patient " died, every thing he had about him was immediate- " ly thrown overboard; theſe, with the ſtricteſt at- " tention to ventilating and drying the ſhip, by " fires on the lower deck, the wells and cockpit, " have, I believe, been the ſucceſsful means of " removing the infection, as no caſe has occurred " for ſeveral weeks, I have no doubt of its being " perfectly eradicated.—The ſcorbutic caſes (20) " all yielded to the lemon-juice, and a cheſt of " oranges taken out of a prize for their uſe. " The convaleſcents are nearly recovered." June 23d, 1801.

In this fever of the Robuſt we obſerve another inſtance of pulmonic affection accompanying typhus. We are therefore to be very guarded in withdrawing the vital excitement by blood-letting. If the patient does not periſh from the uſe of the lancet, the recovery is always lingering and ſlow.

In

In ſuch caſes, the beſt method of proceeding, is to moderate the fever, by keeping the ſtomach and bowels clear, gentle antimonials, and then bliſters in local pains. If the ſtate of the pulſe, for the firſt few days, gives no ſigns of diminiſhed ſtrength, yet it will be ſeldom found, that ſtimulants of any kind can be given with ſafety. The antimonial preparations are beſt confined to this ſtage of fever, when the body ſeems to bear the alvine evacuation better than any other method of depletion.

The Robuſt at this time was commanded by Captain Brown, and was brought into fine order of diſcipline. When I ſpeak of a ſhip's diſcipline being favourable to health, I do not only mean, that it includes every thing connected with cleanlineſs of perſon and clothing, dry decks, pure perflation, &c. but alſo that order and conduct, which inſpire activity of mind, and which is communicated to every individual under the command of a diſcerning and accompliſhed officer. The orders of ſuch a man are delivered with that dignified demeanor which commands reſpect, and makes it a pleaſure to obey. Syſtem and accuracy pervade the whole rotine of duty, and every manœuvre is performed with cheerfulneſs, regularity, and diſpatch. An infectious typhus cannot laſt long in ſuch a ſhip, it muſt ſoon die away for want of indolence and filth to foſter and nouriſh it.

The Barfleur, in June and July, buried nine men from a fever, ſuppoſed to be typhoid; but not detailed ſatisfactorily for my peruſal or animadverſion. I rather ſuſpect that this ſhip was infected by raw men like the others, and that more was imputed to intoxication, as the cauſe of it, than ought to have been.

The

The Formidable, Captain Grindal, was alſo tainted with typhus, by a ſingle boy ſent from the Cambridge. It extended to fifty caſes, and three of them proved fatal. This ſhip was truely in high order; was formerly commanded by Captain Whitſhed, and afterwards by Captain Thornbrough; both of theſe officers were famous for modes of order and diſcipline in their ſhips. In the preſent ſickneſs, the attention and humanity of the Captain, officers, and ſurgeon, kept pace with the affliction of the people, and appeared more like the duties and affection of a private family than a ſhip of war. By theſe means, a diſeaſe that began with ſo much malignity, was counteracted in its outſet, and ſoon ſubdued. The debilitated convaleſcent was kindly ſupported by the good things of life, from the table of the cabin and wardroom, and ſpeedily returned to his duty on deck.

Mr. John Allen, like other ſurgeons, in his report of this fever, laments the want of port wine among the medical ſtores; and Captain Grindal regretted the loſs of the hoſpital ſhip, where he had ſeen on his paſſage home, when under his wound, ſo many comforts beſtowed on the ſick-bed. Mr. Allen's practice reſembled our own; he found the cinchona inadmiſſible, till remiſſions became diſtinct, or convaleſcence appeared. The effect of cold eaſterly winds, in increaſing the number of attacks, was manifeſt, and a favourable change always ſucceeded, as the wind ſhifted to the weſtward, with dry and warm weather. The ſubjects of this fever were raw landmen and marines; it did not affect the ſeamen.

In a former part of my ſervice, when my duty directed me to repreſent the neceſſity of good wine, and other comforts to men languiſhing under typhus,

typhus, a venerable officer, whom I then ſerved, was ſo prompt in eſpouſing the cauſe of ſuffering humanity, that he gave a written order to the Agent victualler at Portſmouth, to purchaſe port wine of the beſt quality from the merchant. This happened in 1790, when a contagious fever appeared in the Gorgon, among a detachment of the New South Wales rangers. It would be well for naval ſervice, if many of our officers would imitate this benevolent conduct of Admiral Roddam. But it is the misfortune here, as elſewhere, we are fettered and perplexed with the ſtupid and unmeaning forms of office, that muſt be overcome before we can do any good; and thus the golden opportunity is too often loſt by delay and deliberation.

The Magnificent was alſo infected from this general ſource of diſeaſe, by men newly raiſed, meagre, depreſſed in ſpirit, dirty, and badly clothed. The ſhip was now at ſea; the fever did not extend to a great number of caſes; but for the number ſeized was uncommonly ſevere. The purſer and eight men died. The Magnificent had no remains of this fever when ſhe returned to port in June, and ſent no men to the hoſpital.

A draft of fifteen men carried a typhus from the Cambridge to the Terrible, in March. Captain Fayerman had juſt joined the ſhip, and he was warned by the fate of others to take due precaution. The clothes of the whole party were thrown overboard, which, with cleanlineſs of perſon, and a well ordered ſhip, ſoon deſtroyed the ſeeds of diſeaſe, and the fever extended but to a very few caſes. Mr. Mant, in his treatment of this typhus, found much advantage from the external uſe of cold water.

To the Royal Sovereign alſo, this prevailing infection was carried in March, by a ſingle dirty boy.

boy. The man who ſlept next to him in the ſick-berth, was infected in a few days, and it gradually extended to about twenty others: ſome of theſe had the fever in rather a ſevere degree, but in general it was mild. The early and perfect ſeparation of the infected from others, with all neceſſary precautions beſides which Mr. Smithers adopted, contracted the ſcope of this diſeaſe with little trouble, and in a ſhort ſpace it entirely died away.

Mr. Dykar informs me, that the Reſolution had nearly ſhared the fate of other ſhips, from an Iriſh boy, of a ſimilar deſcription, who had rather a malignant form of fever. Being early aware of the nature and ſources of the fever, Mr. Dykar employed all the neceſſary means of prevention, and with perfect ſucceſs.

In May, the Belleiſle was thought to be infected with typhus, brought on board by a woman of the town. The man who cohabited with this woman died of the fever: it afterwards ſpread to others, and was attended with ſymptoms of great malignity, from which eleven died. Mr. Burd, ſurgeon of the Ville de Paris, being ordered by Admiral Cornwallis to examine the ſick, found much fault with the crouded manner in which they were kept. Captain Domett was at this time in the Baltic, for ſuch a circumſtance could not have taken place under his command. Mr. Burd, in a communication on this ſubject, obſerves, "I "found all their patients crouded together in the "ſick-berth, a ſmall place, and I recommended a "ſpacious temporary berth to be built under the "half-deck; all the bedding and clothes of thoſe "affected to be boiled in ſoap and water; their "perſons alſo to be waſhed, and the ſtricteſt atten-"tion to be paid to prevent intercourſe with the "ſhip's

" ſhip's company, by having truſty ſentinels placed " at the door. I alſo recommended every atten- " tion to be paid to free ventilation, &c. There " have been no freſh attacks theſe two days; and " I have no doubt, but in a ſhort time, the pro- " greſs of the diſeaſe will be arreſted. By a ſimi- " lar mode of conduct, ſeveral ſhips of the fleet " have been reſtored to health; and, in no in- " ſtance have we found it neceſſary to have " recourſe to Dr. Smyth's *infallible noſtrum* againſt " contagion."

The ſurgeon of this ſhip ſeems to have been uninformed of the practice againſt infection, ſo long eſtabliſhed in the Channel, otherwiſe he would not have left it to a brother officer to dictate his duty, as was done in this inſtance. As Mr. Burd predicted, the fever diſappeared, and the convaleſcents recovered faſt, from the liberal ſupplies of freſh beef, mutton, beer, and vegetables, which were now ſent to ſea. On the 12th of September, the Belleiſle arrived in Cawſand Bay, and ſent one man in phthiſis to the hoſpital.

Mr. M'Arthur joined the Belleiſle about this time, and remarks, " There had been a typhus " fever on board, but it had at this time entirely " diſappeared. I have not received any informa- " tion, by which I can trace it to its ſource. It " ſeems to have paſſed through the greateſt part " of the ſhip's company; and, when it proved " fatal, happened ſo early as the fourth or fifth " day. In theſe caſes, I underſtand there was " an acute pain of the abdomen, from the firſt " attack, which remitted a few hours before " death."

We are not yet to cloſe accounts with the Cambridge: Mr. John Morgan of the Amelia frigate,

in March 1801, thus reports: "Early this month "a fever made its appearance, with the ſymptoms "of a mild typhoid remittent, and gave way to "the uſual treatment, viz. emetics, antimonials, "bark, opiates, and wine. It was brought on "board the Amelia, by a new ſet of boys, that "came from the Cambridge the day before we "ſailed. They were young lads from the coun-"try, very ill clothed, and dirty. Great care "was taken to ſeparate them from the reſt, and "alſo in purifying their bodies with ſoap and water, "clean ſhirts, clothes, bedding, &c."

Thus, in one ſeaſon, more than one hundred men died of one kind of fever, in the ſpace of a few months. It is probable, that nine-tenths of this mortality might have been prevented by an hoſpital ſhip, to which the firſt caſes might have been moved, and thus extirpated the malady in an inſtant, as often happened before. It is at all times a painful duty to ſee a man die at ſea; but under theſe circumſtances it is particularly ſo. Something is due to the laſt moments of an officer or man, who expoſe life in the ſervice of their country; and a very moderate expence attends all that is required for that purpoſe. It is a taſk incumbent on the medical character to make this declaration; for if the exerciſe of the art is to be deprived of the benevolent feelings, it becomes an inſult to the ſick-bed.

A few reflections muſt ſtill be indulged after this gloomy detail of infection, diſtinctly traced by different ſurgeons to the ſame ſource; and when they muſt have been ignorant of what was obſerved in other ſhips. Had the officers and medical gentlemen been ſupine in their meaſures, ſuch a general contagion was capable of unnerving the vigour of the fleet, and bringing the country into

into danger. I grieve to ſee a ſingle death happen; but when it evidently is owing to the neglect and indolence of the regulating and port duty, it is doubly culpable. A ſhip is fitted in the harbour for the purpoſe of cleaning, purifying, and clothing new-raiſed men; but in all theſe reports of the ſurgeons they had been ſent to the reſpective ſhips in the moſt filthy condition imaginable.

In my former Volumes I went earneſtly into this diſcuſſion, with a view to correct the abuſes that were deſtructive to health in recruiting the navy. Yet, after a nine years' war we ſeem ſtill imperfect, and to have obtained very little amendment. How dreadful to think that a future war muſt begin without correction in this buſineſs. If it is intended in raiſing men for the navy, that they are to be collected at the out-ports, till they amount to a given number, it is but juſtice to the men, as well as to his Majeſty's ſervice, that they ſhould be lodged in apartments that are conducive to health. Not in filthy and confined ſmall veſſels, like the tenders at preſent in uſe, but in King's ſhips, commanded by naval officers, and worked by men belonging to the navy. There, from their firſt entry, they can be beſt taught that order, diſcipline, and regularity of duty, which they are afterwards to follow on a larger ſcale. Spacious ſhips, like thoſe now employed for troops, ought alſo to be appointed for carrying them to the naval ports. But the firſt buſineſs in the recruiting ſervice ought to be, to clean and clothe the raw landman, to learn him how to keep his perſon decent, and how to preſerve his clothes and bedding from being loſt or ſtolen. To theſe ought to be added, the appointment of a ſteady old ſeaman, to inſtruct him in the firſt rudiments of manual ſeaman-

ſhip, that his improvement and uſefulneſs may be progreſſive.

The tenders on the preſent eſtabliſhment are in every reſpect obnoxious. They are deficient in medical aſſiſtance, though no part of ſervice more needs the preſence of a well-informed ſurgeon: and the only naval officer on board is the Lieutenant commanding. The veſſels themſelves are the property of rich merchants, who make them a traffic; and they are navigated by a maſter and crew, who uſually belong to the ports to which the veſſel comes to, and who have other attachments on the ſpot than public ſervice. On the whole, I conſider tenders as a great nuiſance, and earneſtly wiſh to ſee them baniſhed from naval employment.

To the medical reader, who has had no experience of a ſea-life, the facility with which theſe ſhips were cleared of infection, muſt appear extraordinary. The crew of a ſhip of the line, amounting to ſix or eight hundred men, are lodged in a ſpace not exceeding the fortieth part of a village that uſually contains a ſimilar number of inhabitants. Yet, when fevers of this kind break out, in either town or country, they continue to ſpread a much longer time, and are attended with a greater mortality.—Even in hoſpitals, the ſpace allotted is at leaſt ten times greater than can be allowed in a ſhip. How then can any prophylactic meaſures, derived from inexplicable proceſſes, be brought in competition with thoſe ſuperior duties of diſcipline? The modern field-marſhal of fumigation, even allowing full belief to the quixote adventures of his vapours, and the romantic deliveries they are ſaid to have wrought in the

the ſcenes of diſeaſe by ſea and land, by no means claims ſo large a proportion of credit, as muſt now be given to theſe ſimple and well-known principles. Though ignorant what typhoid contagion is, yet we know enough of its powers to guard againſt it. We ſee its debilitating effects exemplified on body and mind: we therefore ſupport the body by ſalutary ſtimuli; and we engage the mind with cheerful exerciſes or amuſements. We give to the lungs air, duly oxygenated; and as this is obtained at the cheapeſt rate from the laboratory of Nature, we take it from the virgin atmoſphere. To the ſtomach we allow food eaſy of digeſtion, and if neceſſary we ſuperadd wine. We obviate cold as a weakening cauſe, by fires, or warm clothing and cleanlineſs: we abſtain from duty that expoſes the body to bad weather, or ſevere fatigue; and prevent intoxication as favouring the prediſpoſition to be infected. Other ſubordinate forms of prevention ariſe out of theſe. It was impoſſible that a practice ſo ſimple ſhould not work its way among reflecting minds; and the preſent Volume affords ſuch teſtimonies in its favour, from officers and ſurgeons, that I entertain the ſtrongeſt hopes of its being permanent, and that it will never be tamely yielded up in the navy. Not leſs than ſixty inſtances of infection in this Volume confirm our prophylactic meaſures.

In thoſe forms of diſcipline which ſecure health, the Britiſh Man of War as much ſurpaſſes that of other nations as it excels them in all the practical duties of ſeamanſhip: hence the value of rendering the ſubject of health familiar to the naval officer.

During our extenſive and long experience of the origin, progreſs, and extinction of contagion, in ſhips and every where elſe, I have entertained a

ſtrong ſuſpicion, that typhous infection *very ſeldom* affects a perſon more than once in a life-time. There muſt indeed be ſome truth in the obſervation: after perfect recovery the body ſeems no longer ſuſceptible of the diſeaſe, and breathes a tainted air with impunity, as daily happens in infected ſhips. When contagion is introduced to a ſhip a ſecond time, after ſome interval, it attacks a *new ſet* of men; the former fever patients are exempted. In ſituations where there were much danger of being infected, though not much ſcared at the dread of fever, I have felt confidence from having had the diſeaſe when I was eleven years of age; and never had recourſe to the charm of prophylactics.

The following hiſtory of infection comes from Mr. Carruthers of the Malta, whoſe zeal and anxiery in the duties of his profeſſion, paved the way for the attack of the diſeaſe in his own habit. He ſays,

" A typhus fever has lately made its appearance " here: I therefore beg leave to detail, for your " information, the manner in which I ſuſpect it " was introduced, the ſymptoms, means of extir- " pating the infection, and treatment.

" On or about the firſt of June laſt, the Malta, " *ci devant* Guilleaume Tell, was commiſſioned in " Portſmouth harbour, commanded by Captain " Bertie. Nothing particular occurred in the " medical duty, except from a large liſt of vene- " real caſes. On the twelfth of July the fever " firſt diſcovered itſelf extremely violent and " ſudden, having then juſt completed our crew " of ſeven hundred and thirty-eight from the

" Royal

" Royal William, Montague, and others. We " alſo received between three and four hundred " ſupernumeraries for the fleet cruizing off Breſt. " This additional number of men did not fail to " crowd our decks exceedingly; but what was " ſtil worſe, the whole were extremely dirty, had " no change of linen or wearing apparel, no not " a bed or blanket to lay upon, for many ſucceſſive " nights. Theſe circumſtances were fully repre- " ſented as they came under my view. From " what information I have been able to obtain, " we are of opinion that the contagion was intro- " duced by the men who came from the Royal " William, as a ſimilar diſeaſe had prevailed there " for ſome time. But as many of the ſick la- " boured under *typhus icteroides*, as well as others, " under *typhus petichialis*, I began to think that " the Montague brought us the fever from the " Weſt Indies; as ſhe had juſt arrived from Ja- " maica in a ſickly condition, having buried a " number of men on the paſſage.

" I was alſo told, that the Malta, when in the " French ſervice, had a ſimilar fever in the Me- " diterranean, and had loſt a great part of her " crew. But as we had been tolerably healthy " till within theſe few days, I have reaſon to " think the ſhip herſelf is not to blame.

" The men, on the attack, were inſtantly ſeized " with nauſea; uncommonly violent headach; " ſyncope; laſſitude over the whole body; yawn- " ing; tongue and lips and fauces much parched; " pulſe low, quick, and unequal; great anxiety, " with cold clammy ſweats. Vomiting was ur- " gent in ſome, but diarrhœa did not accompany " it, as I have before ſeen. Some of the patients " had involuntary crying, and ſhedding of tears, " like nervous or hyſterical women.

" On the firſt attack an emetic of epicac. and " antim. tart. was immediately given: the bowels, " if neceſſary, were opened; camphor, opium, " wine, bliſters, &c. followed; and cinchona du- " ring convaleſcence.

" No perſon died on board; for, latterly, on " being ſeized they were immediately ſent to Haſlar " hoſpital, where only two died out of three hun- " dred ſent on ſhore.

" We had recourſe to Dr. J. C. Smyth's fumi- " gation as adviſed by the Sick and Hurt Board, " and ordered in our inſtructions: but nothing " whatever removed the contagion till the ſuper- " numeraries were taken out of the ſhip; when " every thing was duly cleaned, dried, and per- " fectly ventilated.—From this haraſſing duty I was " myſelf a ſufferer in the fever; but I am now " well. *Malta, St. Helen's, Auguſt* 16, 1802."

This ghaſtly account of the Malta's fever very much reſembles the preceding part of this article. It does very little credit to ſervice. There was certainly a period of this war when no port-officers would have ventured to ſend men in ſuch conditions, as here repreſented, into any ſhip of the Channel fleet. It is even reported, that the Firſt Lord of Admiralty was ſo diſguſted with the repreſentation of the receiving ſhip at Spithead, that he ordered her to be paid off, to get quit of her contagions. That ſhip, at an early part of the war, had a ſpar deck laid over her waiſt, that ſhe might contain more men, when a deck ought to have been removed, to anſwer the purpoſes of ventilation, for the preſervation of health.

I was ſurgeon of the Royal William in the armament of 1790, during the moſt active period of

of fitting ſhips that was ever known at Portſmouth, under the flag of an officer that never permitted ſervice to relax; this was Admiral Roddam. Every man ſent to another ſhip from the Royal William was examined by myſelf; and not a ſingle inſtance of contagion occurred in any veſſel fitted at that port. It will be well if the examples which are produced in theſe pages, ſhall be the means of correcting abuſes in the regulating and port duty, that lead to ſuch diſaſtrous conſequences. It ought to be remembered, that the Navy of Great Britain will not always exceed that of France in the number of ſhips as it does at this moment. But if a great number are to be weakened by ſickneſs, as have been in the courſe of laſt ſummer, who can calculate on an effective force. Scurvy debilitates a ſhip's company; but the effects of a typhoid contagion, even though no deaths ſhould happen, are ſtill more enervating. We muſt have real and not apparent ſtrength. It was one of the general maxims of the late Earl Howe to complete the quota of men in every ſhip before every cruize. His language to the Admiralty on theſe occaſions partook of that correct mode of ſervice that pervaded all his naval arrangements. He ſaid, "It is my duty to ſail with "any number of ſhips you may pleaſe to order; "but it is mine to know that theſe are complete; "that my Sovereign and country may never be "diſappointed by a fleet which I have the honour "to command; or myſelf and officers hazard our "reputation in non-effective ſhips."

Mr. Carruthers mentions reports of the bad health of the Montague's people. But the diſeaſe there was not of the kind alluded to. (Vide Occurrences for 1801.) Icterus is not an unfrequent ſymptom in typhus: it was particularly remarked,

marked among our ſeamen in the warm ſummer of 1794, in the fever that was ſpread by the French priſoners to the ſhips of the fleet after the victory. A warm ſeaſon may affect the biliary ſyſtem, as it is affected by a warm climate. It is always proper to trace the ſource of infection if poſſible. Had this fever of the Malta happened near any of the fumigating phyſicians on the banks of the Thames, attended by ſuch a ſtory from the Montague juſt arrived from the Weſt Indies, it would have frightened all London; and the Malta, the laſt trophy of Lord Nelſon, might have been condemned to be ſunk at the entrance of the river, under the dread of peſtilential contagion, as had been done with ſome merchant veſſels.

In the month of Auguſt, the Donegal of 74 guns, was commiſſioned at Plymouth, and fitted out with uncommon expedition. This ſhip was commanded by an acting Captain, which is frequently conſidered as a ſtep to promotion. I mention this circumſtance, becauſe the fatigue which a ſhip's company undergo on ſuch duty is unparalleled. Human beings are not ſtocks and ſtones: animal life is divided into ſleeping and waking, motion and reſt; and if all is to be waking and motion, and no juſt time given to ſleep and reſt, health muſt be worn out, and diſeaſe is the conſequence. Mr. Lind, with great propriety and due diſcrimination of remote cauſes, conſidered the ſevere labour of fitting, rigging, and ſtowing the Donegal, as paving the way to a fever that ſoon made its appearance. Nay, individual inſtances were met with, where the men were obliged to abandon their labour, by the commencement

mencement of ſhivering, laſſitude, and dejection, that uſhered in the febrile paroxyſm.

Caſes of typhus diſtinctly marked, firſt appeared towards the end of Auguſt and beginning of September, among ſome young marine recruits, without, however, extending rapidly to others. Mr. Lind does not date the origin from this ſource; indeed the deſcription he gives of the raw landmen, put it almoſt beyond a doubt, where the beginning contagion ought to be traced. Theſe men had lately come from Ireland in different tenders, and put on board the Cambridge. Like all others whom we had lately occaſion to mention, they were ill-clothed, and filthy in their perſons; and, what added to the misfortune, they had received ſo many ſlops in the tenders, at leaſt charged for ſo many, that no new clothing could be iſſued. How uniform all accounts of this kind are in the depredations on health!

The Donegal ſailed on the ſecond of October, when the fever caſes became more frequent, and came to Torbay in the beginning of November. The ſevere weather at ſea, ſeemed to aſſiſt the activity of the diſeaſe; but all communication with the Sick Berth being judiciouſly forbidden, joined to other precautions, manifeſtly contracted the progreſs of the contagion. A few deaths happened on board, from the weather not permitting them to be ſent on ſhore; about twenty were ſent to Mr. Ball's hoſpital, and the reſt recovered under Mr. Lind's care.

The uſual benevolence of the naval character muſt cloſe this account of the Donegal. The ſupply of port-wine, that *ſoul of recovery* in typhoid debility, of neceſſity came from the ſtore of Sir Richard Strahan, who was now the Captain. Mr. Lind, with no leſs generoſity than profeſſional propriety,

propriety, alſo gave them in due allowance, his fine bottled porter, a beverage equally grateful and reſtorative. Theſe articles, changed at pleaſure, raiſe the ſinking ſpirits, cheriſh the hope of recovery, and excite appetite, when every other ſpecies of ſupport fails, and when the whole *Materia Medica* is exhibited in vain.—Strange, that a nation which imports annually fifty thouſand pipes of port wine, and brews porter in millions of gallons, ſhould leave ſuch charities to individuals!

The contents of this chapter afford an immenſe addition to the hiſtory of typhoid infection, as well as to the treatment of the fever itſelf. To ſurgeons I muſt ſtill recommend attention to our diviſion of the ſymptoms in typhus. A juſt diſcrimination of them very materially aids the practice. The employment of antimony, ſo common in the early ſtage, ſeems to be of little or no value in the latter ſtage, when the diſeaſe is rather marked by forms of debility peculiar to itſelf, than by the alternation of chills, heats, and ſhiverings, which characterize febrile movements in the firſt acceſſion. It is alſo of practical importance to diſtinguiſh when the firſt concourſe of ſymptoms decline into the ſecond, chiefly known by ſtupor and the exhauſted condition of muſcular power. I ſuſpect that a phyſician of quick apprehenſion, and a nice obſerver in analizing ſymptoms, will often vary his treatment, under ſuch circumſtances of his patient; but the practical precepts to be followed at ſuch a criſis are ſcarcely to be detailed, and difficult of interpretation. They form the laſt degree of perfection in the healing art; the happieſt combination of genius, talent, and induſtry in the human mind.

The numerous trials of Dr. Currie's cold affuſion, in our ſhips, ſtrongly ſupport the arguments of

of that phyſician. In caſes where it is forbid, advantages will be obtained from our method of ablution of the body. (Vid. Art. Typhus vol. i.)

The fulſome practice of pouring enormous quantities of bark into the ſtomachs of typhoid patients, it now appears is fortunately laid aſide. We therefore ſee with much pleaſure the treatment of this fever becoming daily more ſimple, in proportion as the indications of cure are deduced from obſervations made at the ſick-bed, and not from ill-judged opinions on the operations of nature.

An account of a typhus fever, which appeared on board his Majeſty's Ship Ruſſel, in 1800, by Mr. George M'Grath, ſurgeon.

It is neceſſary to premiſe, that previous to March 1800, the Ruſſel's people had enjoyed the moſt perfect health, and had ſent no perſon to an hoſpital for a length of time; which exemption from diſeaſe, was certainly in a great meaſure to be attributed to the fine order of the ſhip in all departments. A fever of the typhoid type, in March, firſt attracted the attention of the ſurgeon and officers, the origin of which is thus accounted for:

"A ſhort time previous to the appearance of "this malady, we received a draught of men from "the Cambridge, ſome of them much emaciated "and debilitated, and others particularly filthy in "their perſons, and extremely ill clothed. Among "the former number, were a few that had come "recently from Plymouth hoſpital, from one of "them (James Freeſtone) I received the follow-"ing account:

"He had been ſent to the hoſpital for the cure "of a rheumatic complaint laſt January, and ul-"cers which he had on both legs. During the

" time he was under the care of the ſurgeon, he " was taken ill (to uſe his own words) with a very " bad fever, for which he was removed to a ward " appropriated to the reception of fever patients. " In this ward he remained a fortnight, during " which time he had been extremely ill, until the " laſt three days; when, in a convaleſcent ſtate, " and although much debilitated, was in this con- " dition ſent back to the guardſhip, and from " thence the following morning to the Ruſſel.

" I hope it will not be conſidered here as nuga- " tory, if I obſerve, that previous to his diſcharge, " his body was waſhed, and his clothes *ſmoked*, " according to the cuſtom of the hoſpital. This " I mention, in order to ſhew, that I have conſi- " dered the circumſtances of this important ſubject " in a fair and unprejudiced manner.

" Upon a farther interrogation, he added, that " from the time he left the hoſpital, until he made " his illneſs known to me, he had frequent febrile " paroxyſms; and the diſeaſe which he had there " uniformly correſponded with the ſymptoms " which were peculiar to the fever on board, from " which I muſt confeſs he had a very narrow " eſcape."

In April or May, when the Ruſſel came to Cawſand Bay, to land her fever patients, who were then but ſlightly affected, ſome altercation took place between the phyſicians of the hoſpital and Mr. M'Grath, on the ſuppoſed origin of this infection; the former gentlemen conſidering their ſyſtem of purification impeached in the buſineſs.

On my firſt viſit to the Ruſſel, I examined Freeſtone, who in every thing confirmed what Mr. M'Grath had ſtated, with the addition, that when he found that he was ordered away from the Cambridge, from being weak and ill, another man had offered to go in his place, which the officer refuſed,

fuſed, as he could not alter the name. He alſo affirmed, that he found, at leaving the hoſpital, all the dirty clothes in his bag, in the ſame condition they were in when he firſt gave them to be laid up, in the ſtore-houſe.

In the next place, I examined the ſecond man that had the fever. It appeared, that he was one of the ſame draught from the Cambridge, and had originally been ſent from the Roebuck with a fever that he had caught from the Ruſſian ſoldiers, who were landed on Guernſey or Jerſey, on evacuating Holland in the preceding November. Five others from the Roebuck compoſed part of this draught, and had all relapſed, from being ſent on board before they had recovered their fleſh and ſtrength. Theſe ſix men alſo ſaid, that their dirty clothes, at coming from the hoſpital were found in their bags in the ſame condition in which they had brought them there.

Theſe inſtances of filthy clothing, with others in the Edgar, induced Lord St. Vincent to give public orders, that if dirty clothes were ſent from the hoſpitals with recovered men, it ſhould be reported to him.

Such a connected chain of evidence, joined to the perfect health of the Ruſſel, when theſe men came on board, left no doubt about the introduction of this contagion. The advocates of fumigation ought to ſhun the face of day, and cover themſelves with ſhame and remorſe, and repent in duſt and in aſhes, when they are told of ſuch havock being produced by a ſtubborn and obſtinate adherence to their practice.

" The ſubjects on whom this fever exerted its " greateſt violence, appeared to be of two different " temperaments. 1ſt. Thoſe who were either " conſtitutionally deficient in excitement, or

" energy

" energy of body, or of a lax fibre, and a conſider-
" able degree of nervous irritability, and but little
" vaſcular excitement. Among theſe we may claſs
" ſeveral men who were then in the ſick-berth, and
" in a reduced debilitated ſtate, from being under
" the influence of mercurial treatment, (of theſe
" we had a vaſt number) and ſome of the new
" men who had been recently from the hoſpital,
" previous to being ſent on board. Theſe were
" the people who had moſt to dread from the for-
" mal viſitation of this typhus.

" The men of the ſecond order were ſuch as
" may be ſaid to be neither above or below the
" ſtandard of health: in theſe ſubjects it appeared
" in a much milder degree; indeed there ſeemed
" to be an inherent principle, that ſupported the
" body againſt the more depreſſing influence of the
" fever.

" The firſt appearance of the diſeaſe among
" men of the firſt temperament, was in general
" very ſudden, with a ſenſe of cold and horror,
" which during the firſt day was alternated with
" burning heat. The headach, which during the
" early ſtate of attack was but ſlight, became in-
" tenſely ſevere, particularly in the forehead and
" temples. Theſe were ſometimes preceded by
" vertigo, or, as the patients expreſſed it, as if
" they had been knocked down by a ſudden blow.
" The eyes appeared in general wild, and in ſome
" diffuſed and red, with the pupil dilated. The
" countenance was for the moſt part cloudy, and
" looked grim, ſometimes flushed, at other times
" ſallow, and of a dingy hue. The patient fre-
" quently appeared as if much agitated; when
" ſpoke to would anſwer in broken accents, or in
" a querulous tone of voice, as if produced by
" fear. The tongue was always at firſt white,

" ſmooth,

" ſmooth, and covered with a kind of mucus;
" and, when deſired to put it out, looked ſwoln and
" tremulous. The thirſt was always conſiderable;
" and for the moſt part there was an uneaſy ſenſa-
" tion at the ſtomach; and in ſome, although not
" common, there was vomiting; but this ſymp-
" tom during the firſt days appeared in few. The
" pains of the joints and legs were ſevere, with a
" ſenſe of gnawing, or general ſoreneſs, and parti-
" cularly in the loins. The proſtration of ſtrength,
" liſtleſſneſs to motion, and great muſcular debi-
" lity, were leading features from the commence-
" ment of the attack. The pulſe was in general
" ſmall, languid, and ſunk in the arm.

" Theſe were the firſt ſymptoms, which in ge-
" neral laſted till the third day, without any con-
" ſiderable change or remiſſion: ſometimes, how-
" ever, a ſudden remiſſion of all would take place,
" and health return uncommonly faſt: but this fa-
" vourable turn happened but to few who were de-
" bilitated previous to being ſeized.

" When the diſeaſe was protracted beyond the
" fifth or ſeventh day, in general a freſh train of
" morbid appearances took place; the pains of
" the loins, limbs, and head, became much exaſ-
" perated, the pulſe felt ſmall and wiry, ſo as to
" be hardly felt by a ſlight examination, the ſkin
" uncommonly hot and dry, and the heat not
" equally diffuſed over the body, but concentrated
" as it were in ſome particular part, while another
" part would feel cold and clammy. As the diſ-
" eaſe thus advanced from the 9th day, the ſymp-
" toms became more fluctuating. The uneaſineſs
" and anxiety increaſed with great dread of dying;
" ſpaſms of the legs, hands, and arms, were com-
" mon, with a ſuppreſſion of the excretions, and
" a conſtant inclination to micturition, without

" ability to evacuate the urine. This ſymptom " proved ſo obſtinate in one patient, that after " uſing a variety of remedies, we were about to " make uſe of the catheter, when fortunately (I " believe from the dread of the operation) he " voided upwards of a pint of limpid urine. In " another patient, where this ſymptom had proved " very obſtinate for a conſiderable time, and after " an evacuation had been procured, a conſtant " *ſtillicidium* continued for ſeveral days afterwards. " At this period alſo the bowels would become " torpid, diſtended, and painful; the pulſe more " frequent, the heat more ardent, conveying a burn- " ing ſenſation to the hand, the tongue, from white " and ſmooth, would grow black and rough, and " the teeth covered with a black cruſt; lips ſhin- " ing and dry; and the mouth invariably over- " flowing with a tough ſaliva. About this time " breathing frequently became oppreſſed, with " great ſtricture of the thorax, and oppreſſion " about the præcordia. As the evening advanced, " the patient would become comatoſe, ſometimes " declining into a ſleep, from which he would be " ſuddenly awoke by frightful dreams; after which " he would ſink into a low muttering delirium, " which for the moſt part would continue through " the whole courſe of the night. This ſtate of " the diſeaſe was invariably accompanied with " deafneſs and general torpor, and the patient ap- " parently ſlept with his eyes half open, which " gave a frightful appearance to the countenance. " The ſkin from being perhaps extremely hot, " would become preternaturally cool, with a pulſe " ſcarcely perceptible, from being more expan- " ſile: at this period the patient would complain " of his throat being ſore, and difficult deglutition; " the ſtools would paſs involuntarily.

" In

" In two patients, what nouriſhment was re-
" ceived by the mouth paſſed unchanged, in ap-
" pearance, through the ſtomach and inteſtines im-
" mediately, conveying a ſcalding ſenſation at the
" anus, as it was evacuated: one of theſe proved
" fatal. In two other caſes in this aggravated
" ſtate of the diſeaſe, petechial ſpots appeared on
" the neck, thighs, and knees; and, in another,
" an epiſtaxis, or profuſe hœmorrhage took place
" from the noſe. Small livid ſpots were obſerved
" about the angles of the mouth, upper lip, and
" noſe. The ſkin was now generally dry and im-
" pervious, ſometimes covered with cold ſweat,
" that felt unctuous: a few were troubled with
" teazing cough, and bloody expectoration.

" The firſt changes for the better would appear
" about the fourteenth or ſeventeenth day. Theſe
" were marked by a more expanded pulſe, and an
" equable perſpiration over the whole body, with
" an abatement of thirſt. The ſtricture of the
" cheſt, and difficulty of reſpiration, would gra-
" dually ſubſide, and the black incruſtations fall
" from the tongue and mouth, ſometimes followed
" by diarrhœa, though of ſhort duration.

" Theſe ſymptoms were noted at the bed-ſide of
" the patient four or five times a-day.

" In the ſecond claſs, the commencement of
" the attack was always preceded by a ſlight de-
" viation from health, perhaps for a day or two
" before. The diſeaſe was then uſhered in by a
" vitiation of taſte, nauſea, and an increaſed ſen-
" ſibility to cool air: in ſome, alternate heats
" and chills; and in all there was a dimneſs of
" ſight, with headach, which was not ſo intenſe or
" deep-ſeated as in the other claſs of patients.
" There was alſo a ſlight confuſion of thought,
" with conſiderable languor, achings and pains of

" the knees and loins. The countenance was " rather dejected, the eye-ball full, the pulſe " ſmall and quick, from 100 to 120; the degree " of heat felt moderate, but when cloſely preſſed, " it conveyed a cauſtic ſenſation to the hand, and " the ſkin was clammy with cold ſweat. In ſome " the tongue appeared at firſt moiſt and ſmooth, " without papillæ, it would then become dry and " rough, in ſome white and ſlimy, and in others " ſo natural, that nothing could be drawn from it. " The ſtate of the pulſe alſo varied from quick and " weak to a natural pulſation. The pains and " headachs in general remitted during the day, " and became worſe at night. The ſleep was " ſometimes diſturbed, and the patient would be " heard muttering to himſelf; but in no inſtance " did it ariſe to the degree of delirium obſerved in " the other claſs. It was remarked, that the more " this fever aſſumed the intermittent type, there " was the leſs danger in proportion; nor was it of " ſuch long duration as when it preſerved the " ſtrictly continued form. Sometimes on the fifth, " but oftener on the ſeventh day, and though the " patients continued languid for a conſiderable " time, convaleſcence eventually took place. " This favourable change was obſerved in the " countenance, tongue, pulſe, and ſtate of ap- " petite.

" All the individuals of a meſs have been ſucceſ- " ſively affected with the ſame train of ſymptoms, " as have been detailed, peculiar to the latter ſtate " of the diſeaſe. Many of them ſo ſlight, as not " to be confined to their beds. To this ſpecies " of fever, I conceive, the denomination of typhus " mitior to be moſt applicable; not that I would " imply by this any ſpecific difference in the two " ſorts of the diſeaſe, but merely a variety."

This

This distinction, taken from Dr. Cullen's Nosology, is superfluous. There is no difference in the nature of the fever, it is only a more aggravated, or milder train of symptoms; *plus vel minus, non variat speciem.*

"As soon as the fever appeared, and the patient "complained, it was sometimes suppressed at "once, by the administration of an emetic and su- "dorific. But where the contrary happened, he "was sent to the sick-berth, where his body was "washed clean with soap and water, and if not in "a condition to sit up, he was put into a clean "hammock, furnished with a clean bed, sheets, "and nightcap. The next object was, to cleanse "the stomach and intestines; and although nausea "and sickness did not always call for this, still it "was found indispensable from recent *ingestu*. This "evacuation never failed of being highly salutary, "by removing the crude and acrid contents of the "*primæ viæ*.

"The antimonium tartar. was the medicine which "I found most effectual in answering these pur- "poses. It was given in small doses, after short "intervals, and repeated occasionally, till sick- "ness, nausea, and, if the case required it, till full "vomiting was produced. If it was intended that "this medicine should operate by stool, the doses "were made smaller, and the intervals longer; "but if it had not this effect, a purgative was given "after the emetic.

"The next object was to excite universal sweat- "ing; this intention was also best answered by "small doses of antimonials, combined with "opiates, and rendered diaphoretic by aq. am. "acetat. which I found determined its operation "to the surface of the body, particularly when as- "sisted by frequent draughts of mild tepid liquors,

" rendered grateful by balm or ſage. To anſwer " this purpoſe alſo, and to keep up a ſoft, moiſt, " ſtate of the ſkin, ſeveral other remedies were " employed, particularly neutral ſalts, pulv. epicac. " comp. pulv. antim. and camphor, &c. Fomen- " tations were frequently uſed to the extremities, " which, towards the latter ſtages of the diſeaſe, " were below the natural ſtandard of heat; and, " in fact, every other means were employed to " favour the production of free and univerſal ſweat- " ing. When this could be accompliſhed early in " the fever, it ſeldom failed in procuring a remiſ- " ſion, ſo as to admit a free adminſtration of bark, " which I never found admiſſible, until a conſider- " able apyrexia had taken place, it was then given " with wine and opium, as occaſion required. Se- " veral of the patients could not be prevailed up- " on to take the bark in any form; when this " was the caſe, I really did not obſerve that the " cure was in the leaſt retarded, as wine was " agreeable to all, and at all periods. In the very " advanced ſtages it was neceſſary to give wine, " the quantity being regulated by the effects which " it produced. When given in this way, it never " failed in raiſing the pulſe, and powerfully ſupport- " ing the vis vitæ.

" *Opium* ſeems to have an effect analogous to " that of wine, and from it I have experienced " the moſt ſalutary effects in relieving low deliri- " um, depending on debility, and the diſordered " ſtate of the *ſenſorium*: and when given with " æther, muſk, or camphire, it conſiderably mi- " tigated the ſpaſms and tremblings of the ex- " tremities, which were uſual in the advanced " ſtages of the diſeaſe.

" But in ſome patients to whom opium was ad- " miniſtered, it produced nauſea, frequently aggra-

" vated

" vated the headach, and diſturbed the ſleep. In
" theſe caſes the powder of opium was made into
" an ointment, by mixing it intimately with hogſ-
" lard, and was diligently applied externally by
" means of friction. When it was rubbed in, in
" this manner, it had the moſt deſired effects in
" producing ſleep, allaying irritation, removing
" the ſpaſms, and obviating the inconveniences
" which ariſe from its internal adminiſtration.

" For relieving the coma, headach, and local
" pains, epiſpaſtics were very effectual. In ſome
" caſes it was found neceſſary to repeat them, and
" with incalculable relief, particularly in pain and
" ſtricture of the thorax. In three caſes, where
" there were uncommon irritability of ſtomach,
" attended with violent vomiting, a bliſter to the
" gaſtric region completely removed this trouble-
" ſome ſymptom, after ſaline draughts in the
" ſtate of efferveſcence and opiates had been tried
" in vain.

" During the whole courſe of the diſeaſe there
" was a preternatural retention of the fœces, which
" required opening medicines; from experience, I
" was induced to prefer laxative glyſters, as pur-
" gatives taken by the mouth were apt to occaſion
" ſickneſs and vomiting. In caſes of obſtinate
" coſtiveneſs, I was obliged to uſe calomel.

" I found the ſp. æther. nitroſ. highly grateful
" for quenching thriſt, when much diluted. It
" ſeemed to give relief to painful flatulencies. The
" doſe was twenty drops, in a cup of barley water,
" every hour. Cold water was much deſired by
" many, which was always indulged.

" Alleviation of ſymptoms was in general af-
" forded by the uſe of cold water; the body was
" frequently imbrued with cold vinegar and water,
" unleſs when increaſed perſpiration, or low pulſe

" forbade it. The patients ſeemed pleaſed and " refreſhed by this practice. The cold aſperſion " had a conſiderable effect in moderating violent " heat, relieved vomiting in a few caſes.

" After the diſeaſe was removed, a great de- " gree of debility, with impaired appetite re- " mained, more eſpecially in protracted caſes; " and the intellectual faculties were ſometimes " ſuſpended for a few days. To aſſiſt the ap- " petite, I gave decoct. cinchon. infuſ. gentian. " columbo, &c.

" In concluding theſe few remarks, I am per- " fectly aware, that the great ſucceſs which we " have met with in this diſeaſe, depended much " on the attention which was paid to the appear- " ance of the firſt ſymptoms, which afforded often " an opportunity for cutting it ſhort, or at leaſt " obviating its danger. At the ſame time the " moſt perfect cleanlineſs, and pure air, was at- " tended to with punctuality, and every thing re- " moved that could aggravate ſymptoms. At the " ſame time, Captain Sawyer, and the gentlemen " of the wardroom, humanely allowed the ſick " freſh diet, and other dainties from their tables, " beſides a liberal allowance of port wine, porter, " &c. which I conceived neceſſary for the con- " valeſcent ſtate.

" I have not as yet ſaid a word on the means of " prevention that were uſed, for a very ſufficient " reaſon, becauſe little more could be done in ad- " dition to the ordinary œconomy, and the high " diſcipline of the ſhip. For had cleanlineſs, and " the moſt ſcrupulous attention to the comforts of " the ſhip's company been ſufficient to preſerve " health, the Ruſſel, I will venture to ſay, never " would have been ſickly. I may add, that in " wet and moiſt weather, or when the ports could

" not

" not be opened, clear burning ſtoves were diſtri-
" buted in every part of the ſhip, and windſails
" kept in order, with every regard to cleanli-
" neſs in perſon and clothing, warmth, and dry
" decks. The patient on the firſt indications
" of attack, was moved to the ſick-berth, which
" was well ventilated, where he remained till the
" *ſweating* proceſs was over, or a complete remiſ-
" ſion obtained. He was then ſent to a convaleſ-
" cent berth until fit for duty. If, however, he
" was not relieved in the early ſtage, he was tranſ-
" ferred to a ward appropriated for the worſt caſes,
" and moved to the convaleſcent berth in his turn.
" By theſe means the mild and ſevere caſes of the
" complaint were kept ſeparate, and thus the at-
" moſphere was leſs affected from over-crowded
" apartments. When ſufficiently ſtrong for duty,
" they were again well waſhed, all the clothing
" and beds returned to them, after being well
" ſcoured with ſoap and hot water, that no dan-
" ger of infection might be communicated to
" others."

" We have now only ſeven in the ſick liſt in a
" convaleſcent ſtate; one caſe proved fatal out
" of fifty, twenty-four of whom went through the
" moſt aggravated form of the diſeaſe. The per-
" ſon that died was previouſly debilitated from
" confinement in a jail, being an offender. Tor-
" bay, April 6, 1800."

The condition of the Ruſſel, at the above date, augured a very ſpeedy deſtruction of the exiſting contagion; but the reſpite was of ſhort duration. The weather became cold, tempeſtuous, and rainy, with an eaſterly wind, always unfavourable in ſuch ſituations,

ſituations, equally accelerating the diſpoſition to fever, and relapſe, and retarding convaleſcence.

This ſtate of the weather, with north-eaſterly winds, continued for days without intermiſſion, and the caſes of fever increaſed in proportion. It had before chiefly attacked raw landmen, or young marine recruits recently embarked, but now became more diffuſed among others, till ſixty was the number ill. Mr. Spry, a young man, and ſurgeon's-mate, was among the ſufferers, and the whole medical duty devolved on Mr. M'Grath. The caſes, though numerous, were however much milder in degree; but as there ſeemed no proſpects of a change of weather, the Ruſſel, on the 24th of April, was ordered to Plymouth, and landed her ſick, about ſeventy, but moſt of them convaleſcent.

It was however obſerved, that the men who had paſſed through the fever, and remained on board, were more quickly recovered, with fewer relapſes, than thoſe ſent to the hoſpital. A ſhip labouring under a general contagion is a moſt diſtreſſing ſcene, more eſpecially when the greater part of comforts and nouriſhment are charities ſupplied by officers. This ſhip, like many we have ſeen, muſt have ſuſtained a large mortality, if conſiderable quantities of diet had not come from that quarter. The ſhip's wine is a meagre ſour compound, very unfit for medical purpoſes, but ſtill worſe when there is no freſh meat to recruit the exhauſted juices of the emaciated typhoid convaleſcent. But the number of ſick was now ſo great, that no private fortune was equal to ſupport them; the laſt reſource was an hoſpital, and conſequent defection of men, from the facility of being entered as objects for invaliding, which in its turn leads to indolence, feigned complaints, calling up

up of old hurts, and the loſs of energy in both body and mind.

About the 12th of May, the fever did not attract much farther attention. In July the Ruſſel returned to port, in perfect health; and ſome days after I had viſited her, a woman came on board, probably with fever upon her, who died next day. Mr. M'Grath adds, "I have reaſon to believe, "that the contagion was in ſome degree renewed "in the ſhip, during the ſix days which we lay in "Cawſand Bay laſt month. A woman, who "came on board to ſee her huſband, was ſeized "in the evening with fever, the moſt ſevere "ſymptoms of typhus, and died next day with "ſigns of great putreſcency. Soon after this, I "believe two days, her huſband was taken ill, and "paſſed through the uſual ſtages of typhus: after "him, a woman was infected, who had attended "the one who died. The diſeaſe from that time "extended to ſeventy others, of whom one died, "the fever being mild in its nature, though occa-"ſionally aggravated by bad weather at ſea. Theſe "were all cured on board."

Mr. M'Grath makes the following obſervations on fumigation: "Without wiſhing in the leaſt to "detract from the merit and philanthropic inten-"tions of thoſe gentlemen, who have favoured "the public with their opinions on the ſuperiority "of fumigations in exterminating contagion, I "would beg leave to obſerve, that the happy "effects they attribute to it, might be ſaid to be "more the conſequences of increaſed attention, "and adoption of free ventilation, as in all the at-"teſtations in favour of this plan, which I have had "an opportunity of reading, this appears to have "been aſſiduouſly attended to. I would moſt cer-"tainly venture to give it, as my opinion, that

"no

" no occaſion can poſſibly occur, which can " juſtify the reſumption of this practice, which " would not equally authorize a diſpenſation of it. " However, if in general it be conſidered not " eaſy to determine concerning the propriety of " ſuch proceedings, it is far from difficult to fore- " ſee the pernicious conſequences which may at- " tend this proceſs; as by totally truſting to it, " the guardians of health, and other attendants, " are rendered negligent of the moſt important " part of their duty. Believing it therefore a " queſtion at beſt arduous in theory, and in the " practice very critical, it would become us to " renounce this 'myſterious antidote,' which ap- " pears to have gone on for a conſiderable time " paſt, with the deep ſilent flow of a ſteady ſtream, " without adequate obſervation, until happening " to meet a rift of rocks, which checked its " courſe, it grew more noiſy, and attracted more " attention, whereby it will be gradually forced " out of its way by the ſuperior efficacy of me- " chanical philoſophy. When a line of diſtinction " ſhall be drawn accurately between the ſucceſs " of the one practice and the other, I am ſatis- " fied no room will be left for doubting which " ought to be preferred.

" To you, Sir, we owe the means of extricat- " ing ourſelves out of the mazes of prejudice, " and intricacies of a miſleading theory; without " which, we might have implicitly continued to " follow the ſteps of our anceſtors, and ſervilely " have adopted their maxims and errors, and thus " ended our days without daring to think for our- " ſelves, or the welfare of mankind.

" Upon contemplating the effects of ventila- " tion in arreſting the progreſs of contagion, from " analogical reaſoning, I could not help falling

" into

" into this reflection: If the obſervation of Natu-
" raliſts be true, 'wherever a poiſonous plant
" grows its antidote is found; Nature is pretty
" uniform in her laws; every thing which is gene-
" rated has its oppoſites; there is no evil without
" its corrective;' and ſhe certainly produces a
" remedy for that malady in the pure air, without
" having recourſe to a doubtful and complex ex-
" periment, unſupported by ſatisfactory or chaſte
" teſtimony. Happy it is perhaps for ſociety,
" that the human mind is ſo conſtituted, that it,
" in general, meets with new propoſitions with
" great caution. You have ſaid, that nitrous
" fumigation came in a queſtionable ſhape; and
" you have proved that its ſupporters are incapable
" of explaining themſelves.

" As your labours are now univerſally valued, I
" look to your laudable activity with a pleaſureable
" anticipation of the reſult; and heartily congra-
" tulate you on the diſcuſſion which is now abroad,
" in which the intereſt of the country is ſo deeply
" involved."

The following remarks are made on the *affuſion of cold water*. " I have had ample experience of
" the beneficial effects of cold ablution in fevers;
" and from my own obſervation will venture to
" pronounce it a ſafe efficacious remedy, when
" the reſtrictions ſo judiciouſly laid down by Dr.
" Currie are attended to. And I can affirm with
" confidence, that no evil of any magnitude ever
" aroſe in the courſe of my practice from its
" adoption, even when catarrhal ſymptoms were
" preſent.

" I have experienced, that the earlier this re-
" medy is had recourſe to in the diſeaſe, in like
" proportion it will be found the more effectual in
" arreſting the progreſs of fever.

" Several cafes have yielded to the cold lavation " without the aſſiſtance of any medicine whatever; " but I have found that the prudent adminiſtration " of evening anodynes powerfully aſſiſt. In the " more advanced ſtages, where the ſkin was dry " and impervious, with more or leſs delirium, and " where a cuticular diſcharge could not be pro- " cured by the moſt powerful ſudorific medicines; " by throwing a bucket of cold water over him, " rubbing him dry, and laying him between the " blankets, I have known a comfortable glow of " heat to ſucceed, followed by a gentle and ſalu- " tary perſpiration, firſt appearing about the fore- " head and neck, and then by adminiſtering bland " diluent drinks, ſuch as balm or ſage tea, the " diaphoreſis would become general, the confu- " ſion of thought diſappear, and the patient would " fall into a calm and refreſhing ſleep, which " ſometimes laſted for hours. He would then " awake much recruited, with an abatement of all " the ſymptoms; and in ſeveral a complete reco- " very took place under theſe circumſtances.

" Indeed, invariable ſucceſs has attended my " endeavours ever ſince I began to adopt this " mode in a large ſcale; and no untoward circum- " ſtance or ſubſequent inconvenience have oc- " curred in my practice, which is now ſo per- " fectly familiar that I have the utmoſt confidence " in it; and feel juſtified in purſuing it, from " principles of humanity as well as of ſcience. In " ſome of the milder caſes I have known one " bucket of water poured over the head and body " produce ſuch a ſhock, that the redundant " heat and increaſed velocity of the circulation " immediately fell to the natural ſtandard, and " never more returned The diſeaſe, by this " means was inſtantly cut ſhort, which otherwiſe

" might

" might have been protracted to an uncertain " duration with increasing malignancy."

In some part of Mr. M'Grath's account he remarked, that the fever in many instances, latterly, was attended with catarrhal symptoms; but notwithstanding the typhoid type preserved its form; and Mr. M'Grath wisely continued the method of cure which he had hitherto conducted with success. This disease, at the time, attracted a considerable share of attention from officers as well as surgeons in the fleet; but, I believe, without either the Captain or Surgeon of the Russel shrinking from their opinion; and their triumph in the end was complete.

I cannot forbear to mention the punctuality of cleaning and washing the clothes and bedding of the sick in this ship during the prevailing fever: It would be well for naval service, if we could enforce such attention in the hospital departments. I suspect little benefit is going on for the sick, when I observe any of the officers in these institutions sitting at a table of green cloth, with a huge bale of papers before them, and dictating, with all the formality and pedantry of writing-masters to their clerks.

The charity of Captain Sawyer and his officers in this affliction, kept pace with the able and benevolent arrangements of the surgeon.

As somewhat connected with Mr. M'Grath's account of the typhus on board the Russel, I subjoin the following history of a contagious fever, by Mr. Brown of the Roebuck. By the people who had been sent from that ship to Plymouth hospital, I suspect the disease was carried on board the Russel; if not in their emaciated bodies, at

at leaſt in foul clothes that had remained in the bed-houſe, *unventilated and unwaſhed!*

" Sir, Roebuck, Plymouth Sound, 19th January 1800.

" The late prevalence of a contagious fever " of great virulence on board this ſhip, having " afforded me an opportunity of making ſome " practical remarks, which may be of uſe on " ſimilar occaſions, I cannot deny myſelf the " honour of laying them before you; though I am " very far from flattering myſelf with the poſſibility " of propoſing any thing new to a perſon who has " already ſo amply enriched the Medical Science " with valuable diſcoveries and improvements in " all its departments.

" This formidable diſeaſe made its firſt appear- " ance on board this ſhip early in December " laſt; and certainly had its origin from the " loathſome filth and impure air, which were " the natural conſequences of having above four " hundred Ruſſian ſoldiers on board ſince the loſs " of H. M. S. L'Eſpion on the 17th of No- " vember *.

" An early intimation of its nature was afforded " me in this circumſtance, that of four patients " who had ſuffered the evacuation of bleeding, " purging, &c. about the firſt of the month for a " catarrh, the inflammatory ſymptoms of which " ran very high. Theſe were among the firſt " who were ſeized with the diſeaſe, and of theſe, " two afterwards died, one on board, and the " other at Haſlar hoſpital.——As it was here " plain that the evacuations, by inducing debility, " favoured the attack of the diſeaſe, I concluded

* The Eſpion was loſt on the Goodwin Sands, on her paſſage from Holland, with Ruſſians on board.

" that

" that the contagion itſelf operated by debilitating,
" for which reaſon my plan of cure from the firſt
" was to ſtimulate, and experience has proved
" with what propriety.—Having had occaſion to
" obſerve, whilſt on board the Niger, in the year
" 1796, the inutility of the new prophylactic fumi-
" gations by means of nitrous acid gas, a circum-
" ſtance which your able pen has already made
" known to the public, I never on this occaſion
" made uſe of them; for I conceived, that in
" addition to their having no power over con-
" tagion, as was proved by the ingenious Mr.
" Burd, then ſurgeon of that ſhip, under your
" own eye, they might even prove injurious, by
" ſupplying for a time an atmoſphere very deficient
" in the proper proportion of oxygene; the want
" of which neceſſary ſtimulus, by inducing a de-
" gree of debility, might prediſpoſe (as the eva-
" cuations had done) to the diſeaſe.——The
" means of prevention which I preferred were,
" ventilation by fire and wind-ſails, dryneſs, and
" cleanlineſs.——The advantages reſulting from
" theſe are ſo well underſtood, and have been ſo
" forcibly inculcated by you, Sir, to the great
" improvement of health in the naval ſervice, that
" it is unneceſſary to expatiate on them, I can
" only aſſert that they proved in this ſhip perfectly
" adequate to the extermination of contagion; the
" virulence of which cannot be diſputed, when
" it has been mentioned that ſixty of our ſhip's
" company were infected with it in the courſe of
" three weeks; and that during that time three
" ſucceſſive loblolly-boys, and as many attendants
" on the ſick-berth had the fever in its worſt
" form.——The firſt ſymptoms were, low ſpirits,
" averſion to motion, and every kind of food;

" alternate cold and hot fits, with vomiting, pro-
" fuſe ſweat, and great proſtration of ſtrength:
" violent headach, and ſome confuſion of intellect
" ſoon followed; the pulſe was unuſually feeble
" and languid; the tongue dry or covered with
" black ſordes. In other caſes the attack was
" more inſidious; ſo much pain in the breaſt,
" cough, and dyſpnœa being preſent, that it might
" eaſily have been taken for common catarrh.
" In doubtful caſes of this kind I abſtained from
" the uſe of ſtimulants for the firſt day or two, by
" which time the diſeaſe ſeldom failed to ſhew its
" true features.—A high degree of pain, amount-
" ing ſometimes to exquiſite torture, was felt
" through the lower extremities, particularly about
" the knees; in advanced ſtages of ſome of the
" worſt caſes, this was always characteriſtic of
" danger, and might be ſuppoſed to depend upon
" the paucity of the fluids inſufficiently ſtimulating
" the ſides of the veſſels, and thus creating pain-
" ful ſenſation.

" Delirium was a common and often an early
" ſymptom.—My practice was, after cauſing the
" patient to be waſhed with warm water and ſoap,
" (if circumſtances could allow,) and clean linen
" put on, to give an emetic, and after its opera-
" tion opium, in doſes ſuited to the degree of the
" diſeaſe. No other evacuation, a gentle laxative
" excepted, when coſtiveneſs prevailed, was ever
" uſed, the cure being entirely truſted to opium
" and wine. Peruvian bark was tried at firſt, in
" in ſome caſes; but I found it ſo much inferior
" to opium, even when it could be retained in
" proper quantity on the ſtomach, (a circum-
" ſtance which ſeldom happened,) that I after-
" wards reſerved it entirely for the convaleſcent
" ſtate, where it certainly had merit.

" I have

" I have one remark to make on the uſe of " tinct. opii in delirium, which, in many of the " caſes I had to deal with, was of that furious, " violent kind, which has often been ſuppoſed to " depend on inflammation of the brain, errone- " ouſly: for, as it yielded with the other ſymptoms " to the general remedies, there is no founda- " tion for ſuppoſing it to depend on a different " cauſe.

" The remark is, that if tinct. opii is given in " moderate doſes often repeated, it ſeems to have " no effect on this ſymptom, but if given largely " and at once it ſpeedily removes it. This was " firſt ſuggeſted to me by accident; a patient of " a debilitated habit, from a recent flux, on whom " the contagion made an early and deep impreſ- " ſion, had for three days been ſo outrageous, that " it was difficult to keep him in his hammock, " was at laſt reduced to a ſtate of ſuch extremity, " that, to prevent the fatal event that ſeemed faſt " approaching, I adminiſtered a doſe of gtt. LXXX " tinct. opii in a glaſs of rum, three hours after " which I was aſtoniſhed to hear him talk ſenſibly; " after another hour he had gtt. XXXV tinct. opii, " ſoon after which a ſound ſleep came on, which " laſted till morning, when I was much pleaſed " to find that his only complaint was great debi- " lity.—Fever never returned.——Experience in " three other caſes on board, (in one of which it " was abſolutely neceſſary to give 150 drops of " tinct. opii at one doſe to preſerve life,) has " ſince tended to prove the truth of this remark.

" It was only in deſperate caſes, however, " where there was every reaſon to expect death, " that I had the temerity to uſe ſo large a doſe of " this invaluable medicine, the virtues of which, " in low fever, cannot be ſufficiently celebrated;

" for, in general, it was not neceſſary to exceed " CL. drops, in divided doſes, in the twenty- " four hours, ſupporting the patient at the ſame " time by a liberal allowance of wine, (a bottle " per day in bad caſes,) and ſuch articles of diet " as could be reliſhed; where wine was diſliked, " good hot rum-punch in equivalent quantity was " ſubſtituted with equal benefit.

" This practice was ſo very ſucceſsful, that I " have the ſatisfaction to ſay, that it never failed " in any inſtance, where it had a fair trial; for, in " each of the two caſes which (out of ſixty) ter- " minated fatally on board, an unlucky accident " conſpired with the violence of the diſeaſe itſelf " to defeat my anxious endeavours towards a cure: " in the firſt, a quantity of rain-water getting " paſſage in the night through the ſeams of the " quarter-deck, (under which the ſick-berth was,) " completely drenched the patient, (one of thoſe " who had been bled on the firſt of the month,) " unperceived by the attendants, and from greater " ſuffering, unfelt by himſelf, the conſequence of " which was ſo ſudden an increaſe of debility, that " hiccup and conſtant vomiting came on imme- " diately, and death ſoon followed. In the other " caſe the diſeaſe had been reduced to a ſtate of " convaleſcence ſo early as the third day, on the " evening of which the patient, elated no doubt, " with the proſpect of returning health, had the " imprudence to participate ſo freely in the regale " of grog, which ſailors at that period (Chriſt- " mas) indulge in with impunity, that death, from " exhauſted excitability, was the conſequence in a " few hours.

" Upon the whole, it is my opinion that the " ſurgeon (prophylactic meaſures, ſuch as have " been already mentioned, being properly attended

" to by the officers,) who in this diſeaſe adopts the
" bold plan of cure, which is founded on the
" ſtable foundation of the Brunonian inductions,
" will be able to effect more than has ever yet
" been imagined by thoſe who, applying their
" knowledge of thoſe laws by which the action
" of inanimate matters on each other are regu-
" lated, to the living ſyſtem, have placed the pre-
" vention of the diſeaſe, as well as the indication
" of cure, in the decompoſition of an unknown
" ſomething which they have ſuppoſed to be the
" principle of contagion.

" W. BROWN."

MEDICINA NAUTICA.

THOUGHTS ON CONTAGION AND PREVENTION OF PLAGUE, IN A LETTER TO A PHYSICIAN.

Dear Sir, Plymouth Dock, 1799.

IN one of your letters, I perceive you mention the partiality with which you ſuppoſe I had embraced the new doctrine of Peſtilential Fluids, lately propagated by the ingenious American Profeſſor Dr. Mitchell. But if you will again look over my ſecond Volume you will obſerve that I have only anounced it, as ſhowing the fallacy of all preceding opinions on the ſubject, or ſpoke of it in ſuch general terms, as by no means implied my conviction of its correctneſs. I ſee, from a late Number of the European Magazine, that other medical gentlemen think nearly as you do; and ſuſpect that great calamities may befal the public ſervice of the nation on that account. It is therefore credited that I have entered fully into the ſpirit of practice which the American theory preſcribes.

You

You will readily agree with me, that a conſiſtent theory of Contagion is a deſideratum in medical ſcience. Nothing had appeared on the ſubject that a modern phyſician could turn over with patience, ſo as to deduce from it any practical precepts. But a number of circumſtances, at the preſent time, have concurred to point it out as a period very favourable to the inveſtigation. The laws of the animal economy have lately, on the induction of experiment, been better known; the authority of great names, that often gave the ſemblance of matter of fact to ingenious hypotheſis, has been thrown aſide; which, joined to the improvements introduced by pneumatic chemiſtry, gave Dr. Mitchell the chance of producing ſomething worthy of an inquiring age. The havock which the Yellow Fever has made among the Britiſh ſoldiers in the Weſt Indies, and the repeated viſits of a ſimilar diſeaſe in different diſtricts of North America, opened a large field for obſervation, which became doubly valuable as being conducted under a more correct medical philoſophy. It will be well for human kind, if the knowledge acquired amidſt thoſe ſcenes of death and deſolation, ſhould be the means of preventing the importation of the plague into Europe, that at this moment is ſaid to be raging on the ſhores of the Mediterranean.

The inveſtigation of what is called *Marſh effluvium*, with the aſſiſtance of the new chemiſtry, becomes a novel and intereſting doctrine. The language of the ignorant, as well as the phyſician on this ſubject has been nearly alike indefinite: the common term putrefaction reſolved every thing; yet ſo badly explained, that it ſeemed rather to imply a diſagreeable impreſſion on the organs of ſmell, than a proceſs in nature that was

reducing animal and vegetable matter into ſimple elementary principles, ready to form new combinations. This ancient prejudice is ſtill ſo difficult to be eradicated, that men who call themſelves philoſophers and chemiſts, contend for the preference of a recent prophylactic, becauſe it decompoſes the bad ſmell ariſing from ſubſtances undergoing their final decompoſition.

It will not be doubted therefore, that Dr. Mitchell has gone as far as the preſent ſtate of human knowledge could well conduct him: he has illuſtrated his doctrine by a variety of facts, curious and inſtructive, and drawn from ſources not often explored by the medical adventurer. His defence of the manufacturers of ſoap and candles at New York, is a proof of what I have juſt advanced. There can be few readers but muſt be ſtruck with the luminous arrangements of new materials in that work, or not charmed with the eloquence of its ſtyle. In detecting the origin of *marſh miaſma*, and demonſtrating its nature, Dr. Mitchell has been eminently ſucceſsful. But in the inveſtigation of *contagion*, he has not been equally fortunate; indeed the ſubject does not admit of it. It is no new idea, that all poiſons partake of an acid principle: the bite of the mad dog, and the venom of ſnakes and ſerpents, have been all reſolved to this quality. The preſent rage for chemical ſtudies has not checked this propenſity. Phyſicians, when they go a certain length, urged on by ardour of a favourite hypotheſis, will return, in cooler moments, to the reflection that they are treating of the effects of various ſubſtances on the living ſyſtem, which poſſeſſes powers within itſelf, not to be reconciled to the laws of chemical attraction. Thus we ſee much of the inſufficiency of Dr. Mitchell's reaſoning in the treament of peſtilential diſ-

eaſes,

eaſes, by attempting to neutralize the ſuppoſed poiſon in the body, by means of lime and alkalis. His prophylactic rules deſervedly claim attention, but there is much fancy employed in his indications of cure. If it could even be made as clear as any problem in Euclid, that the cauſe of fevers is the *ſeptic gas*, much would ſtill be wanting to convince us, that ſubſtances of a contrary nature taken into the body for the purpoſe of forming new combinations, could put an end to the febrile ſtate. The phœnomena of fevers, are all ſympathies which ſucceed one another in regular order; and the ſame aſſociated train of actions, may be excited by widely different remote cauſes. The phrenitis, as it occurs in a robuſt peaſant in England, is uſhered in with ſymptoms very much like the attack of the Weſt India endemic *cauſos*, in a ſtrong and raw European ſtranger. Yet the practice in both caſes would probably be very much the ſame; *evacuations, and all other means that ſpeedily diminiſh excitement, till the diſeaſe is overcome, without danger of recurring*. An ague is beſt cured by bark; yet we have not learned that there can be any attraction between marſh effluvium and cinchona. If there was, it could in moſt caſes avail but little, for the diſeaſe does not always appear for the firſt day or two, but often not for many days; and when the poiſon, be what it may, muſt be beyond the reach of any medicine, that could directly arreſt it. In contagious fever, likewiſe the ſame rule obtains; the attack is often at the moment of being expoſed to the tainted atmoſphere, or infected body, or clothes; but it alſo, in other caſes, only comes forth in a week or ten days after the infection is received. In the cure, therefore, we think Dr. Mitchell is leſs ſucceſsful than in the prevention, and we ſhould prefer taking our indications

dications from the preſent condition of body, which in yellow fever direct the prompt means of diminiſhing excitement, by the largeſt bleedings that can be practiſed *.

In a paper publiſhed in our ſecond volume, we are told of a practice ſimilar to that of the American profeſſor, having been ſucceſsfully employed to an unuſual extent in the plague, by Mr. Baldwin, the Britiſh conſul in Egypt. I have not learned whether that gentleman is of the medical profeſſion, which would enable him to obſerve much collateral matter of fact, in weighing opinions on this method of cure. But, be that as it may, it does not invalidate his teſtimony. The cuſtom of anointing the body with oil, has not been confined to Egypt, or to the authority of Dr. Mitchell. Dr. Douglas Whyte, a ſurgeon in our navy, has uſed it in the yellow fever, as he contends, with complete ſucceſs, and on a very large ſcale; although it is probable he followed it up, from notions of theory, widely different from what we have ſeen. It will, however, be a difficult matter to introduce this uſe of oil among Britiſh ſubjects; but the evidence on which the utility of it reſts at preſent, is ſufficient to claim the attention of the Navy and Army Medical Boards, if theſe gentlemen are not beyond the reach of inſtruction. Twenty-ſeven thouſand men, compoſing the army of Sir Ralph Abercrombie, in December 1795, in the ſhort ſpace of two years, barely amounted to as many hundreds!!

* It is not yet clearly eſtabliſhed, that *ammonia* will cure the bite of ſerpents. Nor are we fully aſſured that ſulphur and vegetable alkali, or the *ſulphurated hydrogenous gas*, which reſults from their union, are capable of preventing the dangerous effects of the *oxyd* of arſenic.

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The abundant uſe of ſoap and water in purifying clothing, and in perſonal cleanlineſs, muſt be proper in the opinion of every one. Were the cuſtom of ablution, bathing, and anointing the body as general as they were in the days of Celſus, we might expect to ſee diſeaſes ariſing from noxious exhalations of the ſoil, ſuch as ague and dyſentery, and thoſe alſo which are called contagious, as typhus, either entirely prevented, or rendered ſo mild, as ſcarcely to require medicine.

Some time ago a paper made its appearance, aſſerting, that the yellow fever of North America had been imported from the Weſt Indies, from the authority of the College of Phyſicians at Philadelphia. Such an opinion as that, at the time it was publiſhed, we then ſuppoſed might originate from political motives, as calculated to quiet the minds of the inhabitants, and to prevent emigration. But an opinion of this kind gaining ground, however ſtrongly it might tend to enforce the laws of quarantine, muſt in the end be productive of diſmal conſequences, as it deludes the people into a falſe ſecurity, and withdraws the attention of the mind from the real ſource of the calamity, *ſome peculiarity in their own ſeaſons, and the ſoil of the diſtrict.*

If, however, it was the real opinion of theſe phyſicians, that the yellow fever was of foreign extraction, either the regulations of the magiſtrates have failed in preventing a return, or they muſt now explain the reaſon, that in one ſeaſon of the year *only* it makes its appearance. Much more juſt and candid do we think the advice which Dr. Mitchell has given his fellow-citizens, when he told them to look at home for prevention, if they inclined to be ſafe.

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The dread of importing the yellow fever into this country, appears to me to have excited a very unneceſſary alarm. The yellow fever appeared at Granada in the ſummer of 1793, and it was ſoon decided, that the contagion had been brought from the ſettlement of Boulam, by the Hankey of Liverpool. The account was quickly ſent to England, to beware of this ſhip *. She came home under the convoy of Sir A. Gardner; and I was the ſurgeon of the Vengeance, one of the ſquadron.—This veſſel happened to be diſmaſted in a ſquall, and we took her in tow. We were now in colder latitudes, and from having heard of the ſtate of the Hankey at the time we ſailed, when conſulted by Sir Charles Thompſon, about the propriety of truſting our carpenter's crew to repair her damages, I did not heſitate to ſay, that I thought them in no danger. Sir Charles, after this went on board and examined her himſelf, for he poſſeſſed that nobleneſs of ſoul, never to truſt a ſeaman's health in a

* In my firſt volume, Art. Yellow Fever, I mentioned ſome of theſe circumſtances reſpecting the Hankey. Mr. Wadſtrom's Eſſay on Colonization, part ii. has juſt fallen into my hands, and my general ſtatement is more than ſtrengthened by what he ſays. It appears that the Hankey's fever at Boulam was either of the remittent kind, peculiar to that part of Africa, or a fever, probably typhus, brought out by the ſhip from England. I formerly ſaid, that there was no fever in the Hankey, when Mr. Smither's, ſurgeon of the Charon, viſited her at ſea; there had been none for ſome time, nor was there any afterwards. The deaths, in fever, at Boulam, were only twenty-ſix. On the whole, it appears, that the oppoſition to the abolition of the ſlave trade, at Grenada, had given birth to all the malicious reports againſt the Hankey, becauſe ſhe had returned from a ſervice directed to that benevolent and chriſtian purpoſe. But medical enquirers ought to have been above thoſe ſelfiſh trammels, in which gain intraps narrow minds, and cold blooded animals. The paſſengers that embarked in the Hankey, were only fifteen men and women, with four children; I cannot learn how many of theſe died on the paſſage.

ſituation

ſituation that he could not face himſelf. Nothing bad followed, and we could not help ſmiling at the rumours that were ſpread at home, and the fears which prevailed in conſequence. Rules of quarantine were immediately iſſued, which, I believe, are ſtill in force; and, ſtrange to be told, the Hankey was ordered to be ſunk!! We have no information of the medical opinions which gave birth to theſe meaſures and precautions. But if any medical authority could juſtify them at that juncture, all experience, and more cool inveſtigations ſince, ſhew the whole to have been groundleſs. When a nation is trembling for its ſafety, under the horror of impending contagion, it ought to ſelect undaunted phyſicians, as it would conſult firm miniſters on the invaſion of an enemy. Such men as Moſeley and Jackſon, whoſe nerves are unaccuſtomed to ſhake at every breeze, would have been able counſellors at ſuch a criſis. The peace of ſociety can never be certain, if it is to be aſſailed by every breath of infection like the preſent; and mankind have a right to expect better things from the medical profeſſion.

From what we have ſeen or read, there would ſeem to be a certain degree of excitement in the human body, beneath which the yellow fever and plague will not make their appearance. This degree of excitement depends chiefly on the ſtimulus of heat in the atmoſphere; for both fevers commence in the ſultry months, when the temperature is near or above 80° of Farenheit, and ſubſide as the cold ſeaſon approaches. This effect of the weather indicates important practical treatment, and would ſuggeſt many valuable arrangements in the conduct of prophylactic means, ſhould ever the peſtilence appear in theſe kingdoms. In the yellow fever, a *ſtate of body* is alſo required, without the preſence of which it cannot attack; but this has not been diſtinctly

diſtinctly marked by writers on the plague. This diſpoſition is called the unſeaſoned raw European temperament in the Weſt Indies. The climate of North America, the extreme cold of the winter, being ſo great a contraſt to the heat of the ſummer, produces a ſimilar condition in the bodies of the natives; and for this reaſon, they are equal ſufferers at Philadelphia with European ſtrangers. Negroes, or Creoles, who have lived in the iſlands, are exempt from the yellow fever; but after being ſome time in England, and returning home in his Majeſty's ſhips, they have uniformly been obſerved among the firſt who were attacked, and more ſeverely affected than others. The low temperature of our winters therefore induces a ſtate of the conſtitution, an accumulation of *excitability*, or *ſenſorial power*, that renders theſe natives of the torrid zone more ſuſceptible of ſtimuli than they had been before, and with this is produced that diſpoſition to be affected at their return by the endemic fever. Theſe remarks have been confirmed to us by a variety of inſtances during the preſent war.

The accounts of the plague appearing on the Barbary ſhore, you muſt have obſerved from the public papers, have attracted the attention of Government; and you have alſo heard, that a number of phyſicians have been conſulted by the Privy Council, probably with a view to learn, whether the accumulating medical knowledge of the day had acquired any thing new on this ſubject, that ſo nearly intereſts ſociety, and that might aid the police in regulating quarantines.

It might have been expected that a nation which enjoys ſo large a ſhare of the Levant trade, and conſtant

conſtant communication with different ports in the Turkiſh dominions, ſhould have been completely prepared for preventing the importation of this contagion; but I am much afraid the ſolemnity with which the laws of quarantine ought to be obeyed, have been very much trifled with ſince they were extended to Weſt India traders, under the impreſſion of ſtopping the yellow fever. Should any evaſion of the appointed forms of purification ever take place, where real infection is preſent, it will probably be through ſome channel leaſt to be apprehended, and the early ſtage of the diſeaſe will be cautiouſly concealed to elude puniſhment. But before one real plague ſhall make its appearance, we ſhall have rumours of many falſe ones.

A very odd ſcene has been lately acted on one of the London wharfs. Two men employed in clearing a veſſel returned from the Mediterranean, died ſuddenly. An alarm was inſtantly ſpread, with all the credulity of the Engliſh character, that the plague had broke out. A phyſician was ordered by the Lord Mayor to enquire into the nature of the diſeaſe, who, in his report, made uſe of ſome ambiguous expreſſions, and ſerved to preſerve the dread. It, however, was at laſt ſatisfactorily explained, that the two men died of inflammatory complaints, unconnected with peſtilential contagion. But mark the ſyſtem of prevention that took place during this alarm; the goods were ſubjected to what, not to purification, but to fumigation, in order to ſuffocate this captain-general of the troops of death, whether concealed in a bale or a hamper, as you have known a ſervant girl ſmoke a thief that had taken refuge in the chimney. The conſequence was ſuch as you would have looked for, the valuable merchandize has *been ſpoiled for ſale*. This is not all;

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it is reported, that the underwriters have threatened a profecution againſt the advocates for fumigation; and the gentlemen of the long robe will probably employ their eloquence to denounce judgment on thoſe chemical affinities and combinations, which their medical friends with unguarded confidence had not expected to take place.

The Levant merchants, hitherto wiſe from experience, and intent on their gains, had cautiouſly avoided the expoſure of their delicate ſtuffs to the fumes of brimſtone; becauſe they obſerved, what every old woman knows, that the effect which theſe vapours have upon ſilk, whether raw or wove, was to alter the colour of the piece, and decompound all the fine dyes that are fixed in them by alkalis. For theſe reaſons it had been deemed ſufficient, for prevention and purification, to unpack their bales, and expoſe them freely to the air. But if ſuch baneful effects were produced by the fumes of ſulphur, the vapour of the nitrous acid was ſtill more corroding, as burning and turning yellow all animal and vegetable ſubſtances, gold and ſilver lace, that may be interwoven with ſilk, and decompounding all metallic oxyds employed as colours in the ſtuff. (Vide Fourcroy's Philoſophy of Chemiſtry.) Such has been the fate of fumigation, at the chemical period of the eighteenth century! It is our duty to hold up the fact as a beacon for the ſafety of naval ſervice *.

I might

* The muriatic acid gas of Guyton Morveau, the celebrated French chemiſt, which has been for ſome years extolled in France, as correcting and deſtroying contagion, though with as little juſtice as the nitrous in England, was really the invention of Dr. Johnſtone of Worceſter, as appears from the Treatiſe

It might now be aſked, whether the prophylactic means are not weakened, and the ſecurity of prevention, overthrown by this occurrence, as it can never be expected that commercial people will ſubmit to a proceſs that deſtroys their property. Merchants have a right to be indemnified againſt ſuch profligate quackery; and I hope they will find more ſkilful adviſers in future. There has been a degree of obſtinacy beyond the example of former times, in the conduct of thoſe gentlemen, who gave their faith to the new modes of fumigation. They have treated even the moſt obvious and palpable facts which oppoſed it as deluſion and prejudice. Yet, if you look over their liſts, you will perceive that they have been ſitting at eaſe in their arm-chairs in London, and only heard of the trials, or truſted reports from experimenters, who appear to write for the purpoſe of expoſing their credulity. It ſeemed therefore neceſſary, in order to check their career, that ſome ſignal blunder ſhould be committed, that might confound their devices, and humble their preſumption. We now predict, that more ſalutary arrangements, and a more correct ſyſtem muſt ariſe from this maſs of vapour, ſmoke and confuſion.

As it is not our intention to pull down an edifice, without erecting ſomething in its place, you ſhall have, in as brief a manner as poſſible, what I conceive to be the moſt effectual plan for public ſecurity at this criſis.

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tiſe on the Malignant Angina, printed at Worceſter in 1779, by his ſon. The hint for employing the nitrous vapour was evidently taken from that proceſs. Dr. Johnſtone ſenior employed it ſo early as 1747. See his Treatiſe on Putrid Fever.

"SIC VOS NON VOBIS APES MELLIFICATIS."

The port of Falmouth, as being ſituated at the extremity of the iſland, with a ſecure and commodious harbour, would appear to be the moſt eligible ſtation for all ſhips and veſſels to undergo quarantine; and, if infected, to paſs through forms of purification. The trade of London, and all places on that coaſt; of Briſtol, Liverpool, Glaſgow, &c. could all touch here, without incurring much expence or inconvenience. A port remote from the metropolis, it is evident, ought to be ſelected for this purpoſe, for while you extend the ſphere of ſecurity, the means of prevention could be more promptly and deciſively employed. From what has already happened, it is eaſy to conceive the panic that would be inſtantly ſpread, on the plague appearing on board a ſhip in any part of the river Thames. I therefore propoſe, that at Falmouth all ſhips from the Levant, with their cargoes, people, paſſengers, clothes, &c. if neceſſary, ſhould undergo a proceſs of purification, hereafter to be mentioned.

In all parts of the Turkiſh dominions, to which our ſhips reſort, it is ſuppoſed there are Britiſh conſuls of trade on the ſpot, who can with certainty decide on the ſafety of the cargo, and the abſence or preſence of the peſtilential fever in the town or neighbourhood where the veſſel loads, ſo as to regulate the bills of health.

The infection of the plague could only be imported into this country, by a perſon labouring under actual diſeaſe, or articles that have been in contact with the diſeaſed body, or its exhalations. Theſe articles might be referred to bedding, clothing, and merchandize, which conſiſts of ſilk and cotton, wool and hair, or cloths made from all theſe; feathers, furs, ſkins, leather, &c. To all theſes we know, that infectious matter will adhere for

for a length of time. It is not even decided what length of time is required before the matter of infection, if it can be called ſuch, is to be deemed inert, unleſs expoſed to the pure atmoſphere. All theſe ſubſtances, except cotton, are of an animal nature; and I think I am juſtified from obſervation, that to animal ſubſtances chiefly, infection adheres. They ſeem to afford it a ſecure nidus, or lurking place; where its virulence would appear to be increaſed, and acting with more certainty than even the diſeaſed body itſelf. The danger of piling beds and blankets, and wearing apparel of woollen cloth together, even for a night only, is certainly no uncommon occurrence. Whether this fact could be explained by any chemical analyſis of animal matter is another thing. Some pneumatic pathologiſts might tell us, that infection conſiſts of a baſe derived from the animal body, and the acidifying principle which it attracts inſtantly, on a bale of polluted beds or blankets being expoſed, and thus becomes a poiſonous acid. This is Mitchell's doctrine, ſupported by ſome ſtrong analogies. The plague has been ſaid to have ſeized a perſon opening a bale of goods, almoſt inſtantly; and we have known typhus, with equal celerity, communicated to a waſherwoman moving a lump of foul bedding; and to ſeamen while laſhing up the hammocks of their meſſmates to be ſent to an hoſpital *.

It being admitted that infection is propagated and extended in this manner, it muſt at the ſame

* Is the Simoom blaſt, a hot wind which is met with in the deſarts of Africa, and fatal to animal life, any how allied to the nature of marſh effluvium?—*Vide* BRUCE's TRAVELS.

Why does Dr. Pearſon prefer *nitrogen gas*, the *ſeptous gas* of Dr. Mitchell, to other elaſtic fluids for preſerving vaccine matter?

time be accompanied with ſome portion of excrementitious matter which riſes from the human body with it, that acts as its vehicle, or menſtruum, if you will. To waſh it off by plentiful ablution, with ſoap and water; to exhale it by the dry external air; to volatilize it by artificial heat; to ſmoke or ſuffocate it by fumigation, or to neutralize it by chemical combination, are the various intentions of different purifications employed againſt contagion. Where the two firſt can be practiſed, they are the moſt eligible; becauſe they give the idea of delicacy and cleanlineſs at the ſame time. All fumigations are the offspring of ſuperſtition and quackery, becauſe nobody has yet demonſtrated the chemical nature of infection. But artificial heat may be uſeful, as it dries and diſſipates any portion of animal effluvium which may have come from the body labouring under plague.

Let us therefore ſuppoſe that a ſhip arrives in England, from a port where the peſt was raging, and that there is a neceſſity of paſſing her cargo through the ordeal of purification, for the ſatisfaction and ſecurity of ſociety. In many caſes a warm dry air, not exceeding our ſummer heat, will ſpeedily carry off every noxious particle or unwholeſome ſmell; for it is to be expected that ſome moiſture may be preſent, at leaſt an approach to dampneſs at the ſame time. The poiſon cannot retain its activity, when expoſed a few hours to the open air, and a dry ſunſhine. This is daily proved in all well-regulated hoſpitals, and ſick chambers; where the daily expoſure of the whole bedding, and ſhifting the body linen, effectually check the progreſs of the moſt virulent diſtemper. But as immediate recourſe to a dry external air may not always be practicable, we

muſt therefore look for ſecurity from artificial heat, which can even be more depended upon; becauſe we can increaſe it to a greater degree, keeping conſtantly in our minds the delicate texture of ſilks, velvets, or other periſhable commodities which we may have to deal with.

I muſt therefore propoſe that warehouſes ſhould be ſo conſtructed that the whole cargo of a ſhip might be landed at once; whatever ſpecies of goods, capable of harbouring infection, ſhe may have on board. The walls of the building ſhould every where be pierced with flues for conveying heat alike to every corner from top to bottom, from ſubterraneous fires. Metal flues, ſomething on the principle of Brodie's ſtoves, might be fitted to anſwer this purpoſe, that the united effect of the whole might produce the degree of heat wiſhed for. A heat amounting to 110. of Farenheit would be ſufficient, and never to exceed 120 of the ſame ſcale. The fire-places, chimnies, and flues ſhould be ſo contrived, that not a particle of ſmoke or vapour could make its way into the inſide, ſo as to hazard the quality, or ſoil the moſt delicate ſtuff. The whole building ſhould be framed for the purpoſe of confining heat; that the neceſſary degree may be raiſed with the ſmalleſt quantity of fuel poſſible. My old ſhip-mate, Count Rumford, might be able to give us much uſeful aſſiſtance in this buſineſs.

All bale-goods, bags of cotton, and other merchandize, might be ſo diſpoſed on open ſhelves, that the heat could ſpeedily penetrate the very heart of them. The length of time for ſubmitting them to this temperature muſt be judged of from the bulk; but that would ſoon be known by experience. When this heating proceſs is finiſhed, the windows of the building, in a clear day, ſhould

be thrown open, which, by the perflation of the common atmoſphere, ſhould terminate the purification.

At this ſtation for quarantine waſhing-houſes ſhould be erected for the purification of the ſeamen's bedding and clothes, or thoſe of paſſengers. This would be moſt effectually accompliſhed by ſoap and water; but that ſpecies of wearing apparel that is liable to be injured by ſcouring may be expoſed in the hot-houſe.

In the mean time, ſome of the naval ſtores of the ſhip ſhould alſo paſs through the heating proceſs, ſuch as ſpare ſails, canvas, &c. The inſide of the ſhip may be thoroughly waſhed with ſoap and water, well dried by means of fires and ſtoves, and the whole finiſhed with white-waſhing *.

Such a plan for purification, conducted under a proper authority eſtabliſhed for the purpoſe, we heſitate not to pronounce perfect in its kind; equal to the national object, and not endangering the cargoes of immenſe value imported into this country by the Levant trade.—The ſhip would there-

* Captain David Milne, whoſe gallant conduct on many occaſions emblazons the naval annals of this war, lately informed me of an infectious fever having been brought on board La Seine frigate, in her paſſage to the Weſt Indies, by old canvas. Some men were employed in cutting it up, for the purpoſe of converting it into ſomething uſeful, and were, one after another, ſeized with typhous fever. On carefully inſpecting the canvas, it was found ſoiled with excrementitious matter in different parts, and had a moſt loathſome ſmell. It is probable that this canvas had either ſurrounded ſick apartments, in the ſickly condition of ſome ſhip, or had perhaps been ſpread in the hold for priſoners to lie upon, among whom contagion had prevailed; and in this unpurified ſtate was returned into ſtore at the dock yard, from whence this frigate was ſupplied. —No caution, therefore, can be too great, ſo numerous are ſtrovehicles and ſources of contagion.

fore

fore depart, having received her bill of health, duly certified and regiſtered.

At a ſtation thus appointed for quarantine, beſides the buildings juſt mentioned, we conſider wharfs, piers, an hoſpital and lazaretto, officers of health, &c. comprizing a complete eſtabliſhment, to be alſo neceſſary. The whole premiſes ought to be ſurrounded by a wall and ditch, with a conſtant military guard on the out-ſide, and ſmall veſſels to watch on the ſea-ſide.

The conduct to be obſerved, ſhould any perſon arrive from abroad under the plague, demands ſome farther animadverſion. To a number of people, communication with the patient might appear certain death. But the police of a Chriſtian country cannot tolerate the idea of deſerting a human being under ſuch calamity, and is bound by its principles to obviate the horror of leaving him to his fate. A medical officer, therefore, with aſſiſtants and nurſes, ſhould form an appendage to this ſtation; theſe ought to be men who would not ſhrink from their duty in the hour of trial. With ſuch a taſk as this we naturally aſſociate the godlike ſympathy which is recorded of the good biſhop of Marſeilles; and the kind Engliſh clergyman Mompeſſon, who never quitted their flock during a raging peſtilence!

"When nature ſicken'd, and each gale was death."

It is impoſſible to ſay, at what diſtance from its ſource a current of wind is capable of conveying infectious matter. This muſt depend both on the concentrated ſtate of the effluvium or poiſon, and the diffuſion of it in the atmoſphere; but a few yards are perhaps ſufficient, in an open ſituation, for perfect ſafety. In a ſpacious and well-aired apartment, where the body-linen and bedding are often ſhifted, infection can ſcarcely happen, even in a near ap-

proach to the patient. I ſuſpect that the variolous contagion, from the great quantity that exhales at once from the ſurface, which in a manner ſaturates the atmoſphere, is capable, for theſe reaſons, of being conveyed to a much greater diſtance than any other; thus it imbues the clothes of attendants and viſitors, who frequently tranſport it from houſe to houſe, and from town to town. A ſeaman belonging to the Ramillies, was lately carrying a bundle for an officer to Plymouth Dock; at the very threſhold he ſaw in a remote corner of the houſe, a child covered with the ſmall-pox ſitting on its mother's knee: he inſtantly recollected that he never had the diſeaſe, dropped his bundle and ran off. This however did not ſecure him; he ſickened about the eighth or tenth day after, and was ſent on ſhore to the hoſpital. It is probable that a condenſed current of air, loaded with variolous miaſma, met him in the face as he approached the door *.

All houſes of purification ought to be erected in ſpacious ſituations; both for the more perfect treatment of the ſick, and the ſafety of the neighbourhood. It is not enough that a perſon is free from infection: it is requiſite alſo that he himſelf ſhould think ſo. No affliction in life can be more diſtreſſing than labouring under the apprehenſion of being infected; for there are a multitude of occurrences that are apt to keep theſe fears awake, if the perſon is living near hoſpitals or infirmaries; ſuch as hearing of deaths, obſerving funerals paſs by, meeting chairs or barrows conveying ſick, &c. If people, therefore, cannot ſubdue their alarms, a change of ſcene will be the moſt effectual reſtorer of peace of mind; for ſome people are ſo irritable,

* Reported by Mr. J. Allen.

and

and tremblingly alive to this danger, that no reaſoning can overcome their apprehenſions.

But if alarms have been ſpread at the idea of the peſtilence being again imported into Great Britain, it is ſome conſolation that we are certainly better prepared to meet it, than was the caſe in former viſitations. The ſtate of medical knowledge every where is wonderfully improved; the treatment of the diſeaſe itſelf would feel the benefit of theſe improvements; and the ſubject of contagion has been rendered more familiar, by a vaſt accumulation of facts, by the frequent and recent occurrence of infectious fevers. The changes in modes of living among mankind in general, but eſpecially among the inferior orders of people, have introduced habits leſs favourable to propagate and foſter contagion. The ſtreets in the metropolis, and other large towns, are more ſpacious, and kept cleaner. The houſes of the poor are better furniſhed, more airy and neat; perſonal cleanlineſs is more attended to; cloathing has undergone a very material alteration; the uſe of cottons is more general, as well as linen. Theſe articles, as they are leſs apt to harbour filth, by needing frequent waſhing, ſo they are leſs calculated to harbour infection, than the old-faſhioned woollen ſtuffs of our anceſtors. Theſe ſalutary improvements are not confied to populous cities and towns; they extend to the cottage. Many changes in diet have alſo been effected more conducive to prevention. In the event of the peſtilence breaking out, a well-regulated police, directed by judicious magiſtrates, and ſkilful phyſicians, would carefully look into all theſe circumſtances, as by enforcing due attention towards them, the ſpeedy ſuppreſſion of the diſeaſe would depend.

At

At ſo ſerious a criſis a particular deportment would be expected from phyſicians themſelves. The medical character in this country has acquired reputation for private worth, univerſal learning, and active benevolence. During the rage of the peſtilence, the minds of a people awakened to alarm bordering on diſtraction for the ſafety of themſelves and relatives, would naturally turn their eyes to a profeſſion whoſe province it is to ward off human affliction. And if a dignified fortitude and reſolution were not exemplified by the faculty, ſociety muſt ſink to the laſt abyſs of deſpair. The horror of peſtilential contagion is magnified to a perſon of over-weaning ſenſibility, from being an inviſible enemy, and acting even with certainty, at a diſtance from the ſource whence it ſprung. Phyſicians who are conſcious of that defect in their conſtitution, that would unfit them for the bold and reſolute exertion of their profeſſion, would do well to conſider this, rather than expoſe themſelves to an unequal conflict, that could not fail to plunge their friends into deeper diſtreſs. If the general, in the hour of battle, turns his back on the foe, terror and diſmay muſt ſoon extend to the ſoldiery, thrown into diſorder by the fault of their leader; and thus carnage and death, in more hideous forms, would be the conſequence. A ſtrength of nerves and ſpirits that fits us to face danger and difficulty in the common avocations of life, will be often found to ſhrink under this trial. We daily ſee medical gentlemen torturing themſelves with the apprehenſion of being infected; and ſome of our acquaintance carry this timidity ſo far, as to avoid attendance on any patient labouring under continued fever. We have alſo ſeen many brave men of our acquaintance, that had trod the deck of honour,

honour, in the heat of an engagement, with the moſt heroic courage and compoſure of mind, exhibit ſuch tokens of fear at being told there were infectious fevers in the ſhip, as almoſt exceed credibility. This ſpecies of mental excellence, is perhaps more the effect of education than the phyſical ſtrength of conſtitution; and we ſhould like to ſee it more inculcated into young members of the profeſſion, than is uſually done in the lectures of Profeſſors.

The want of a medical inſpector to decide on the condition of health in ſhips arrived from the Levant, is the cauſe of much miſchief. A petty officer from the cuſtom-houſe, with his boat's crew, hungry after perquiſite, are the only perſons intruſted with this ſolemn duty. Public ſervice is by theſe means degraded, and the ſubject of ſecuring health humiliated. Not even his Majeſty's ſhips are exempted from this juriſdiction of the cuſtom-houſe. I have ſeen ſome inſtances during the war, where the ſick of a ſhip, as well as officers, ſuffered conſiderably from theſe ill-adviſed meaſures. If this buſineſs is at all worthy of the attention of Government, it ought to be ſyſtematically conducted in all its branches; not liable to evaſion, but put beyond the reach of being defeated in its weighty and ſerious intentions *.

* It will be ſeen, in the Abſtract of Occurrences, that I have endeavoured, by letters of repreſentation, to correct the abuſes here mentioned, from the number of ſhips, under circumſtances of diſtreſs, after long paſſages, being moſt cruelly put under quarantine.

P. S.

December 5th, 1801.

P. S. The very healthy condition of the fleet under the command of Admiral Lord Keith, has ſhown that Britiſh ſhips of war, diſciplined as they now are, are capable of preſerving themſelves free from peſtilential contagion, on thoſe very ſhores that are ſaid to give it birth. This could not have been the caſe in former times. But if it ſhould happen that the plague may be imported, there is every reaſon for believing that it would be extinguiſhed with the ſame facility that has been obſerved with the typhous contagion. The perfect health of the fleet on the coaſt of Egypt, is therefore great matter of triumph to the naval intereſts of the country *.

* A large ſtore-houſe at Gibraltar is filled with the ingredients and utenſils for nitrous fumigation; but the diſcerning officers and ſurgeons of the ſhips diſdained to tamper with the lives and health of their people on ſuch terms, and left the whole behind.

MEDICINA NAUTICA.

VENTILATION OF SHIPS*.

NO department of ſervice is more frequently the ſubject of converſation among officers and ſurgeons than the ventilation of ſhips. But although all are agreed, that a pure atmoſphere is

* As the chapter on ventilation is chiefly intended for the uſe of officers, I have ſubjoined an explanation of the chemical terms.

GAS; (German) air.

OXYGEN GAS; (Oxyus, a Greek word, ſignifying ſharp or acid, and genomai, Gr. to beget,) becauſe it is ſaid to be the acidifying principle. It is alſo called pure, vital, empyreal, eminently reſpirable, and dephlogiſticated air.

AZOTIC GAS; (A Gr. privative, and zoê, life, becauſe it is deſtructive to life)—It is alſo called mephitic, or phlogiſticated air.—Theſe two kinds of air are only "*mixed*" in the atmoſphere, when "*combined*," they conſtitute *nitrous acid*, or *aquafortis*.

CARBONIC ACID GAS; (Carbon, Fr. Carbo, Latin, coal or charcoal, becauſe charcoal and oxygene, and heat, are its conſtituent parts)—It is alſo called fixed and fixable air, aërial acid, and choak damp.

HYDROGEN GAS; (Hydor, Gr. water, and genomai, to produce, it being a conſtituent part of water.)—It is alſo called inflammable air, fire-damp.

the

the object to be obtained, the ways and means of effecting it are very different in different ships, so that as much quackery is displayed in this, as in any process of duty that we are acquainted with. One Captain is jealous of seeing the least moisture on his decks, while another orders them to be drenched with salt water every morning. Some contend for the purity of a hold, that is corrected by frequent, or constant fires, while others trust to the daily admission of clear water, for the perfect salubrity of the well, &c. There are none of these forms to be either imitated or condemned without qualification.

The method of extracting foul airs from the lowest apartments of ships, has employed mechanical philosophy for a length of time, to invent and adapt an apparatus and instrument for that purpose. More attention has therefore been directed to the construction of pumps for dislodging a vitiated portion, than has been bestowed on a machine that should fill up the vacuum by a purer column. For when a quantity of foul air is extracted by the pump from the hold, the portion that rushes in is not a part of the pure external atmosphere, but what comes from the decks, already much exhausted of its salubrious quality.

The history of Mr. Sutton's invention of air-pipes for ventilating ships, to be found in Dr. Meade's works, affords many striking instances of those rebuffs, which ingenious men too frequently experience from public boards, public offices, &c. It is curious to observe the jealousy of some officers in the dock-yards, on the introduction of Mr. Sutton's machines. These gentlemen having no powers of invention themselves, trembled at every thing that looked like improvement. Their information was so contracted, that they could not comprehend

comprehend his principles, and their minds were ſo narrowed by prejudice, that every impediment was oppoſed to his meaſures. Nothing but the patronage of the Royal Society, which ſeems to have been obtained by the liberality and activity of Dr. Meade, could have brought theſe air-pipes into uſe. They were ingenious, and conſtructed with juſt notions of the ſubject: by communicating with the fire-place, where the air was rarified by heat, a column from below ruſhed up to reſtore the equilibrum. Such an invention was at once ſimple and uſeful; but later improvements have made them be thrown aſide.

A New Board has lately been tacked to the Naval Department, with a view to ſupply thoſe abilities in the ſcience of naval architecture, which were ſuppoſed to be unknown at the Navy Board and Dock-yards. The ſervice has, however, yet to learn the mighty good that is to come from this new eſtabliſhment. Among the number of new appointments, I perceive a chemiſt, with a ſalary of 400 l. per annum. I was in hopes this philoſopher was to be employed in giving lectures and experiments on chemiſtry to our officers, and there would have been no occaſion for me to undertake the taſk of writing on ventilation of ſhips. Such lectures and experiments would be highly uſeful and entertaining. The naval officer might there learn much knowledge that concerns his profeſſion, ſuch as the properties of matter, the qualities of air, water, fire, &c. He might there learn with infinite advantage to ſervice, the working of metals, the compoſition of gunpowder, that ſubſtance which he knows better than all the world beſide, how to uſe in humbling the tyrants of the earth. Chemiſtry would teach him how to preſerve water, proviſions, and ſtores of every deſcription, by infallible

fallible rules: but what is to be the duty of this chemiſt I can form no conjecture.

For the ſake of method, I ſhall divide this ſubject into three heads, and treat of each ſeparately, viz.

1ſt. A ſhort hiſtory of the common atmoſphere.

2dly. A ſhort hiſtory of the foul airs in ſhips; and,

3dly. I ſhall endeavour to eſtabliſh a rational practice by the induction of principles.

The atmoſphere which ſurrounds our earth to an undefined height, is a heteregenous fluid; that is to ſay, it conſiſts of different kinds of air, which have diſtinct properties. The general analyſis of atmoſpheric air, yields of azotic, or mephitic gas, ſeventy-two parts; of oxygene gas twenty-ſeven parts, and commonly about one of carbonic acid gas in the hundred. Theſe component parts may occaſionally vary in their proportion; for there are many proceſſes in nature and art, that both purify and pollute the atmoſphere. The oxygenous gas being the only portion of the atmoſphere that is capable of ſupporting life; whatever diminiſhes that, or adds to the unreſpirable part, renders it foul and unwholeſome. The ſtandard purity is reckoned 72 of azotic gas, and 28 of oxygene. Hence a large concourſe of people confined in a cloſe and unventilated place, and fires which conſume a large quantity of air, cauſe the remainder to be unfit for ſupporting life or combuſtion. All animal and vegetable matters ſuffered to undergo putrefaction, pollute the air, by adding to that part that is unable to ſupport reſpiration and flame, or by abſtracting the pure portion in forming new combinations during their diſſolution.

Water, like the atmoſphere, is now found, by experiment, to be a compound of two kinds of air:

air: on analyſis it gives out 85 parts of oxygene, and 15 parts of hydrogene, which is the baſe of inflammable air in the hundred. So clear and deciſive is this experiment, that deprives water of its rank as an element, that theſe proportions of oxygene and hydrogene gaſes, when put into a proper apparatus, and the electric ſhock paſſed through them, are inſtantly converted into water. It is neceſſary to remember this compoſition and decompoſition of water, as it explains moſt of the proceſſes which pollute the air of a ſhip's hold and well.

Growing vegetables are found, by experiment, to purify the air; they add oxygene to it, by decompoſing the water, and the hydrogene goes to the nouriſhment of the plant. But this proceſs of purification by vegetation, only goes on while it is light: the heat of the ſun has ſo powerful an effect in this buſineſs, that it has been lately proved to be greater in ſummer than winter. Some experiments have been made lately, that prove the proportion of oxygene to be greater in the iſland of Martinique than in Great Britain, and this probably takes place in all the tropical latitudes.

Theſe ſubſtances, oxygene, azote, hydrogene, and carbone, when combined with the matter of heat, caloric with which they have a ſtrong diſpoſition to unite, are ſuſtained in their aëriform, or gaſeous ſtate: they are therefore denominated the baſes of oxygenous, azotic, hydrogenous, and carbonic acid gas.

Oxygene air was firſt diſcovered by Dr. Prieſtley; and on account of chemical theories then prevailing, it was called *antiphlogiſticated air*. It occupies ſo important a ſtation in the various operations of nature, that the diſcovery may be juſtly extolled as the moſt brilliant in the annals of chemiſtry.

To the ſame philoſopher we are alſo indebted for the analyſis of our atmoſphere.

This ſhort hiſtory of the atmoſphere will be ſufficient to prepare us for a knowledge of thoſe *foul airs* that are apt to be generated in ſhips; for from whatever cauſe the ſtandard purity is deſtroyed, the air is to be deemed foul or impure.

Every ſhip inhabited, may be juſtly ſaid to have an atmoſphere of its own ſurrounding it, in a greater or leſſer degree; and it requires a more conſiderable force of wind to diſplace it than has been uſually imagined: it probably adheres to the lee-ſide, and moves with it over the ſurface of the water. It is a common remark, that voracious fiſhes often follow ſhips at ſea for many leagues together. In Guineamen, this is ſaid to be from a kind of inſtinct, that teaches them to watch for dead bodies; but a much better reaſon is, to attribute it to the ſmell, the effluvium conveyed by the air in and about the veſſel; for it is well known, that the olfactory organs of fiſh are very ſenſible. Various matters impregnate the air with ſmell, ſuch as proviſions of different kinds, but the chief ſource muſt be the living human body.

There is no ſituation where ſo large a number of human beings are confined in ſo ſmall a ſpace as in a man of war. In two and three decked ſhips this eſpecially happens; and on various occaſions we obſerve, that it very materially affects health. In the production of ſcurvy this remark particularly applies. When a fleet of ſhips, under equal circumſtances of health, goes to ſea, compoſed of different rates, and cruizes for ten or twelve weeks in the Channel, the ſcurvy uſually begins to appear, but it may be ſooner or latter, according to cauſes that are manifeſt. In ſhips of three decks, a larger number of caſes will be found in proportion

tion to the complement, than in one of seventy-four guns; more will be observed in the two decker than in the frigate, and in the sloop of war or cutter, the proportion will be found the smallest of the whole. We suppose the diet of the whole to have been alike; and if the disease, as it first appears, is not distinguished by these gradations, we know that it has been warded off by means that can be accounted for, such as superior discipline, giving the people less fatigue in duty, &c.

The generation and progress of contagion among ships, is nearly in the same proportion; and is better explained by the condition of atmosphere than any other cause, such as the situation of the fire-place, which has been said to purify air, and destroy infection, by the smoke issuing between decks. At night the ports are lowered down and barred in; the chief places for the crew to draw air from are the small scuttles, hatchways, and gratings, or wind-sails, which are seldom attended to at night. The air that is deprived of its oxygene, by respiration of the people, if heavier than the common atmosphere, will descend to the lower sleeping place; and if lighter it will ascend. Whenever there is a greater number of decks, the air in proportion will become more impure, as it comes less in contact with the external air and free ventilation. A large ship having less motion than a small one, also loses the advantages which a quick agitation gives to a body of air confined below, and prevents the mixture of the superior pure part with the inferior stratum that is contaminated. Thus, the human body is predisposed to scurvy, as impure air accelerates the effect of the sea-diet: thus also the contagion of typhus, more certainly acts as the body is left in a state of diminished excitement, by the stimulus of the vital air being

withdrawn. Hence the great neceſſity of a conſtant ſupply of pure atmoſphere.

It thus appears, that the foul air which lodges in ſhips' decks, where people live and ſleep, is chiefly that portion of common air which is the *reſiduum* of reſpiration; we ſay *chiefly*, becauſe we ſhall afterwards find, that it is liable to be mixed with another kind, that ſometimes riſes from the hold or well.

It may be here aſked, why is ſo ſmall a portion of the atmoſpheric air fitted for the purpoſes of life? and why has nature mixed it with ſo large a quantity of what is hurtful to animals? The poſitive uſes of azotic gas, have not yet been diſtinctly marked by philoſophers; but it poſſeſſes the negative property of diluting the oxygenous gas; which by itſelf is too ſtimulant to be reſpired by human lungs, as found by thoſe who have attempted to breathe it.

A ſubſtance occupying the bottom of a ſhip's well or hold, has been long known in our navy, from its frequently ſuffocating the carpenters employed about ſweetening the ſhip. No deſignation before our own was given to this ſubſtance, nor was its production accounted for. It is only by pneumatic chemſtry that it is capable of explanation. We have ventured to ſay, that it is *carbonic acid gas*, otherwiſe called *fixed air*, *choak damp*, &c. That this is the lethalic vapour of the well, may be eaſily proved by experiment. It can be brought up in a bucket, and may be poured from one veſſel to another; its properties are, to precipitate lime from lime-water; when mixed with water, it imparts to it an acidulous taſte; it turns the blue tincture of vegetables red, like all acids. The ſpecific gravity of carbonic acid gas, in proportion to that of common air, is as 150 to 100; it

it therefore falls to the bottom, and occupies the loweſt ſtratum whenever it is found.

Modern chemiſts have ſatisfactorily analized this elaſtic fluid: it can be compounded and decompounded with eaſe. Its component parts are eighteen of oxygene to ſeven of carbonaceous matter, or coal; hence it receives its name, and the large proportion of oxygene gives it the quality of an acid. It is produced in great quantity during the combuſtion of charcoal, and by fermentation; limeſtone gives it out on being burnt, and converted into quick-lime: it renders alkalis mild; it is alſo produced in the act of reſpiration, which may be proved by blowing into a vial of lime-water, the lime falls to the bottom: this is the vapour which kills dogs and birds at the *Grotto del Cane*, near Naples.

Having now explained the chemical nature of water, and the vapour that ſuffocates people in the well, if allowed to accumulate, we are now prepared to account for its generation in the hold of a ſhip.

The production of carbonic acid gas, is to be explained in the following manner: When water is allowed to remain in contact with the timber of the ſhip, a mutual attraction takes place between their conſtituent principles. The water is decompoſed, and ſupplies oxygene one of its parts to the charcoal, or carbonaceous matter of the wood, which, as we ſaid before, form carbonic acid gas. While this combination is going on between the oxygene and coal, the other component part of water, which is hydrogene, is diſengaged, and as it is very much lighter than common air, it riſes upwards, aſcends among the decks, by attracting caloric, it becomes a gas, and gives to the noſe the bad ſmell which we perceive when the well is

foul. This is the bilge vapour; its ſpecific gravity is about 15 to 1 of common air, being the lighteſt of all elaſtic fluids, and for that reaſon uſed to fill balloons. It is called *fire-damp* by miners, becauſe it is eaſily ſet on fire, and often deſtroys them. Seamen employed in the hold are familiar with it, and amuſe themſelves by taking out the bung of a caſk of ſtinking water, and ſet the vapour on fire by a candle. It mixes in certain proportion with water, and gives it the diſagreeable taſte and ſmell. It changes the colour of white paint to a black, which is often obſerved in ſhips. White lead, of which the paint is made, is lead oxydated; that is, lead combined with oxygene. Now the hydrogenous gas, or bilge vapour, which riſes out of the well or hold, attracts the oxygene from the white paint, which immediately becomes a metal, and loſes its colour. This quality of altering the paint, and the fœtid ſmell diffuſed throughout the decks, will always indicate that the hold, or well, are in an unwholeſome ſtate; becauſe, in proportion to the quantity of the hydrogenous gas which flies upwards, a large portion of the deadly vapour, the carbonic acid gas, or fixed air, will be found in the bottom of the ſhip. Carpenters muſt be very cautious how they venture into the well at this time. It is proper to let down a candle in a lanthern; if the light goes out, it is death to deſcend.

When any ſubſtance liable to fermentation, comes in contact with moiſture in a ſhip's hold, the generation of impure air is the inevitable conſequence. All vegetable ſubſtances mixed with ballaſt may have this effect. Great care ſhould therefore be taken, that nothing but clean pebbles be admitted there. Green wood, whether for fuel, or for ſtowing caſks, is of this deſcription.

When

When ſmall beer puncheons, ſugar, or melaſſes, happen to be ſtove, and leak, they much increaſe the production of impure air, by favouring the decompoſition of moiſture.

Moſt people have perceived the very offenſive ſmell of bilge water after a caſk of ſpirits has been leaked out in the hold. This ſometimes continues long, and is difficult to be got the better off; but the beſt method of cleaning, is to throw in abundance of pure water to carry off the ſpirit. All kinds of ſpirits yield a large proportion of hydrogene, or the baſe of inflammable gas, which gives out the offenſive vapour. This is the ſubſtance that affords the horrid fœtor to the breath of the dram or grog-drinkers, who are known to have ſometimes undergone combuſtion, or burning, during life.

The proviſions which afford the moſt diſagreeable exhalations are cheeſe and butter when they grow rancid. Cheeſe is very much diſpoſed to putrefaction, which is greatly increaſed by the heat of the bread-room, where it is uſually kept. Plain as this obſervation is, yet ſo little has ſervice improved from experience, that there is ſcarcely a ſhip that does not condemn a quantity of cheeſe three or four times a year. All this might be prevented by keeping it perfectly dry, and well aired, while in the ſtorehouſe on ſhore, and by airing it often in dry weather upon deck.

Nothing has been ſo offenſive on the decks of our ſhips as pig-ſtyes. I am glad to find that Lord St. Vincent has ordered them to be moved into the waiſt, to make room for the ſick berth. Our opinion has been long at war with theſe nuiſances: officers ought cheerfully to give up a few meſſes of freſh pork to their ſtomachs, to let their lungs have the full benefit of pure air in their ſleeping and waking hours.

There is another very filthy practice in ships when in port, of hanging their fresh beef under the half-deck, or under the booms in the waist. It is in these places exposed to the breath of the whole ship's company, and is often brushed by them as they pass. The sight is extremely disgusting. I think some plan might be fallen upon to hoist it up under the main yard, and to cover it above with some sort of awning or safe.

We are now prepared, by the explanations given above, to apply the principles of chemistry to the best method of ventilating the decks of a ship.

It has been seen what pernicious effects are to be expected from water being allowed to stagnate in contact with timber in the hold or well. But the same takes place, more or less, in the upper decks, whether wetted on purpose, or by water getting over the ship's gunwale, or in at the ports. We have often seen this baleful practice of washing decks persisted in, till the very planks became green with vegitating substance, and appeared like the inside of a tank, or the bed of a pond. Nay, a surgeon of a seventy-four gun ship, lately complained to me, that in the middle of winter, the main and quarter decks were washed every *evening*, and of course, from the low temperature of the weather, could never be dry. The effects of this custom, that savoured equally of ignorance and cruelty, was quickly observed among the crew. A long sick list of catarrhs, rheumatisms, pleurisies, and low fevers, was the consequence, which only disappeared after a considerable number of deaths, on the approach of summer weather.

It ought to be understood by our officers, that timber can only decay by the application of moisture. They know well, that a ship built of green wood; that is, what they commonly denominate

unseasoned

unſeaſoned timber, will not laſt ſo long as one made of well prepared materials. This difference entirely conſiſts in the unſeaſoned wood being cut down while the tree is full of ſap, in order to ſeparate the bark for the purpoſe of tanning more eaſily from the wood. The ſpeedy diſſolution, therefore, is owing to the quantity of humidity contained in the ſap veſſels, which chemically acts upon the timber, and is reacted upon again. During this combination of principles, different airs, gaſes, or aërial fluids are generated and diſengaged, till the log or plank is wholly converted by ſomething like a ſlow combuſtion into rotten wood, which very much reſembles carbonaceous matter.

We thus ſee that water only is as it were the *ſolvent* of wood; if preſerved from moiſture, it might be ſaid to keep for ever. A deck, like other pieces of deal, will appear perfectly dry to a common obſerver, but if put into an alembic, over a fire, it will ſoon diſcover a large proportion of water that iſſues from its interſtices, and is converted into vapour by the heat. But beſides the production of impure air, and rotting the timber by drenching it with water, chemiſtry unfolds another ſecret, by which it is hurtful to the living body. There is no ſeaman ſo ignorant, but he knows that fogs are bad for health; that they produce colds, rheumatiſms, &c. Now a ſailor ſitting or ſtanding on a wet deck, is expoſed to a conſtant fog, by the water exhaling from the plank; he is involved in a perpetual miſt till it becomes dry. In a ſituation of this kind, ſome people will tell you, that you are apt to catch cold in the feet. But not the feet only, but the whole body ſuffers, and is apt to have its perſpiration checked; for the ſpace which it occupies is ſome degrees colder than other parts of the air, by the quantity of heat that it takes to convert

convert the water into vapour. It is literally expoſure to a cold bath for a length of time; and its effects are exhibited accordingly by the complaints which it cauſes. But in the night-watches the baneful effects of wet decks are chiefly obſerved. If a ſeaman, from being intoxicated, over-fatigued, or otherwiſe, lays himſelf down on the decks in this moiſt ſtate and ſleeps, diſeaſe of ſome kind, bowel complaints, catarrh, rheumatiſms, &c. immediately follow. An attentive officer will therefore be cautious how he allows his watch to loiter about the decks, whether after waſhing in wet weather, or at any time when it is unuſually cold. During ſleep the body is extremely ſuſceptible of cold. Amuſing them therefore by every means, in a night-watch to keep them cheerful and active, is highly conducive to health.

If none of theſe reaſons can diſſuade from drenching a ſhip with ſalt water, there is ſtill another to be urged. Salt water has in ſolution a quantity of *muria*, or common ſalt. Whenever the water evaporates it leaves a portion of this ſalt; and coming in contact with a nail or bolt, the *muriatic acid* in its compoſition, which is one of the ſtrongeſt ſolvents for iron, immediately acts on that metal. Every day that the decks are waſhed, adds a freſh quantity of ſalt, which continues to corrode the iron, till it converts every nail and bolt into ruſt. The bolt is thus looſened in its hold of the timber; the deck becomes *nail-ſick*, finds room to play, till by ſome heavy lurch or motion of the ſhip it ſnaps, and thus endangers the veſſel falling to pieces; as has often happened when they are ſaid to founder at ſea. Such is the ſpeedy decay of iron, as well as timber, by the action of ſalt water; and to make both durable it

is

is neceſſary that they ſhould be ſecured againſt every ſpecies of moiſture.

Salt water will not keep ſo long ſweet in a caſk as pure freſh water; becauſe the ſalt which is in it facilitates the ſeparation of its principles, and produces a quicker decompoſition. It is a common practice to plunge a joint of meat into ſalt water and immediately to draw it out again, with a view to make it keep. This might ſeem to countenance a contrary opinion; but it is to be remembered, that hanging the meat up as ſoon as taken out of the water, allows the moiſture to evaporate while the ſalt remains, and thus ſerves as a gentle corning.

The whole of this doctrine tends to prove, that water can never be thrown over ſhips' decks without doing miſchief. By corroding the iron work it weakens the ſhip; by rotting the timber it generates unwholeſome airs during that proceſs, however ſlow; and laſtly, theſe airs prediſpoſe the body to fatal diſeaſes, and always aſſiſt in bringing on premature decay.

We need ſcarcely hint that the beſt ſubſtitute for waſhing decks is *dry rubbing with ſand*. This practice fortunately gains ground; it affords a wholeſome exerciſe for the people; and it has been well exemplified in the beſt regulated ſhips, that their decks look better than thoſe drenched ſo frequently with ſalt water. This ſalutary reformation has probably ſaved more lives than any other alteration whatever. *Whitewaſhing*, at all times ſo delicate and cleanly, makes a part of this plan, and excites ideas of perſonal cleanlineſs among the people. But it may juſtly be reckoned a purifier of the atmoſphere; quick-lime ſtrongly attracts the *fixed air* of a well or hold; and alſo *nitrous air*, which ſome phyſicians aſſert is contagion itſelf.

But

But if officers wiſh to preſerve their decks in this ſtate, they muſt permit no *fumigations* below; all of which convert the lime into *neutral ſalts*, that in damp weather attract moiſture, and keep the timbers wet. Captain Rickets Jarvis orders quick-lime to be mixed with the dry ſand for rubbing decks; which, beſides the delicate cleanly appearance it gives to the timber, may act ſalutarily in the orlop by attracting *carbonic acid gas*, or fixed air, which abounds there.

This ſhort hiſtory of the atmoſphere, with the manner in which foul air is generated in ſhips, points out the importance of a conſtant ſupply of pure air. When the whole ſhip's company ſleep below at once, which is always the caſe in harbour, the reſpirable portion muſt be very quickly conſumed. The ſcuttles, and ſometimes a few ports, are opened for ventilation. But theſe have their inconveniences. The man who lies neareſt the ſcuttle finds the current diſagreeable, and often ſhuts it. In harbours locked by high lands, it is a good plan to keep the ſhip's broad-ſide to the wind, by a ſpring on the cable. Much however might be done by having air-flews, ſo conſtructed as to communicate with the upper-part of the ſhip, raiſed ſome feet above the gunwale, with ſcuttles fitted to open, as the wind may be on the beam, or otherwiſe. The lower end of theſe ought to come within two feet of the lower-deck; by which means the current of air would be diffuſed abroad, without blowing partially on any particular ſleeping place. A very equal circulation would in this manner be maintained, when there was a neceſſity of laying tarpaulins over the hatches to keep out rain, or when wind-ſails could not be put down to advantage in bad weather. The Meduſa hoſpital ſhip was fitted at Plymouth with air-ſhafts of this

deſcription,

deſcription, and, when duly attended, kept the hoſpital ſufficiently ventilated. We can find no objection, as far as we have converſed with officers, to their general introduction throughout the navy: they can be ſo conſtructed as to be clear of the guns and ropes; and when we conſider the great advantages of pure air to life and health, we ardently wiſh to ſee the trial.

A ventilator conſtructed nearly on theſe principles may be ſeen on board the Barfleur, the contrivance of Rear Admiral Collingwood; and the Admiral, with great juſtice, attributes a large ſhare of the improved health of his ſhip's company, to this flew for conducting from the lower parts of the deck, the air vitiated by reſpiration.

Whenever weather will permit, wind-ſails ought to be put down and carefully trimmed; ſufficiently large to throw in a ſtrong current, that may by its force perflate every corner: the intermediate ſpace between the lower ends of each wind-ſail ought therefore to be kept perfectly clear, as they will reciprocally draw from each other, and thus render the ſtream every where pure.

In the well-regulated ſhip, where one of the main-top-maſt ſtun-ſails, from its commodious ſize, is uſually converted into a wind-ſail, the lower end is generally put ſo low as the hatch of the main hold; and when the fore-hatch is kept open, that part of the hold is of courſe well refreſhed. But the whole bottom of the ſhip cannot be purified in this manner, the ſpirit-room being ſurrounded by bulk-heads that are water-tight, for the ſecurity againſt fire. The bread-room ought to have a wind-ſail to itſelf; and the forepart, which is commonly a cloſe bulk-head, ought either to be grated,

grated, or conſtructed with folding-doors, to be laid open as often as may be found neceſſary. I conſider the bread-room of a ſhip, from its preſent pent-up condition, the number of lights ſo frequently burning in it, and the noxious effluvia iſſuing from cheeſe, &c. as a ſpecies of volcano that is conſtantly throwing out peſtiferous fumes to ſhorten and weaken life.

A wind-ſail cannot be readily trimmed when it blows hard; the head of the ſail is forced from its perpendicular, and forms an angle with the deck, by which means the ſail is compreſſed, and no aperture is left for the air to get down. This may be remedied in ſome degree by lowering the wind-ſail; but even then it fits imperfectly.

We think a very commodious apparatus for ventilation might be conſtructed on the principle of the common bellows. This machine ought to be placed on the quarter-deck, or booms, over the waiſt, that no air might be thrown down but what is perfectly pure. Long leathern tubes being fitted to the naſal of the bellows, would by this contrivance convey a current of wind into every corner below, as you chooſed to direct the mouth of the tube.

The inſtruments now in uſe for extracting foul airs, are as much adapted to the purpoſe as the intention required; but the air which ruſhes in, to reſtore the place of that juſt extracted, gives no additional purity, unleſs a freſh column is flowing in from the upper parts of the ſhip. This ſhows the great neceſſity of ſlews and wind-ſails, that no portion may be ever permitted to ſtagnate below, but a conſtant circulation throughout the whole preſerved.

The new arrangements of the ſtore-rooms in the fore-cockpit, which admit a free paſſage along the

the ſides of the ſhip, as alſo in the cable-teirs and ſtore-rooms abaft, are admirably adapted to preſerve a pure ventilation, beſides the cleanlineſs and order of the whole. The beſt models of this kind with which we are acquainted, are to be found in the Temeraire, Rear Admiral Whitſhed, and in the Mars, Rear Admiral Thornborough, in the Impetueux, Captain Sir Edward Pelew, &c.

Without the ſtore-rooms and wings being arranged in this form, it is difficult to ventilate a ſhip below. In the ſummer ſeaſon, and in warm climates, the orlop-deck, in ſome corners, comes very near to a *vacuum*. This I experienced in my cabin on board the Vengeance, in the Weſt Indies in 1793. Immediately on putting my head into it, the vapour burſt from my face like a heavy dew; and on entering it bodily it ſeemed to guſh from every pore. My ſleep was often diſturbed, chiefly from thirſt. The quantity of water that I drank in the courſe of the night was uncommonly large; frequently ſix quarts; which were ſupplied to me by the centinel at the after-magazine door. The worſt effect was a violent inflammation of my eyes in the morning, from the perſpirable matter, which ſubſided in the courſe of the day, but added to my natural ſhortneſs of ſight. Yet at this time I could ſit at eaſe in the Purſer's cabin on the oppoſite ſide of the cockpit, which was better ventilated, by the ladder conducting a current of air from the hatchway. The quantity of liquid which I conſumed in the courſe of twenty-four hours was about nine or ten quarts; viz. tea twice a-day; half a bottle of wine; half a pint of porter, the reſt water. Urine about four ounces. Had I continued the twenty-four hours in my cabin, the liquids muſt have exceeded ſixteen quarts.

With

With reſpect to preventing the generation of foul air, the fixed air, or *carbonic acid gas* of modern chemiſts, in the hold and well, there are various means practiſed in different ſhips. A perfect knowledge of its chemical qualities, explained above, very much facilitates the nature of this duty. The hold of a ſhip can ſeldom be kept ſo dry, as to generate no fixed air, if the bottom is completely tight, the leakage of caſks, or water falling from the deck, will generally afford moiſture for this purpoſe. Hence many officers direct fires to be kept in the well frequently, and the well itſelf to be inſpected often, and ſwabbed dry. This will often anſwer the intention, but ſometimes there is ſo large a production of the foul air, that other means muſt be put in execution. It is found that carbonic acid gas mixes very readily with water; and, in this manner, clean water being let into the well ſoon takes up the whole; while, at the ſame time, it waſhes away all the ſtignating filth and moiſture which are undergoing decompoſition, and which otherwiſe would prove an endleſs ſource of the noxious vapour. If the cock is ſtopped, or the pipes admit no water, by throwing it from buckets, or ſprinkling it gradually into the well, the ſame purpoſe is anſwered, Quicklime being mixed with this water, would do it ſtill ſooner, becauſe it quickly attracts the air.

In ſickly conditions of ſhips, it is a common practice to waſh the decks and timbers with vinegar, as well as the ſick-berth. The practice is certainly a good one; but it is a better method to ſprinkle it very gently on the deck, than to evaporate it by means of fire, or hot iron. The oxygene air, which gives acidity to vinegar, is diſengaged in a gradual manner, during a ſlow evaporation, and thus adds to the pure and reſpirable portion.

portion. But vinegar muſt never come in contact with white paint, or white waſh. The firſt it converts into ſugar of lead, and the latter into acetate of lime. It therefore changes both, and thus renders the timber more liable to attract moiſture, and become damp.

When *fires* are let into the well for the purpoſe, as it is ſaid, of expelling the foul air by rarefaction, care ſhould be taken not to let them at firſt to the bottom, leſt they ſhould be immediately extinguiſhed, which is always a proof that the ſtratum of air would quickly kill a man. We are, however, of opinion, that the beſt method is to let pure water in as often as neceſſary: this muſt be regulated by the cleanlineſs of the hold otherwiſe, and what may encourage the decompoſition of the moiſture. In warm climates, and in the ſummer ſeaſon, attention to this duty is more required; for water always ſtagnates ſooner in hot weather than cold, ſo much does heat aſſiſt the decompoſition, and conſequently the ſpeedier production of the foul air.

The employment of *fires* for purifying the decks and holds of ſhips, is a very ancient practice; but cannot be defended by a proper knowledge of the ſubject, without qualification. A more correct philoſophy teaches us, that fire conſumes pure air, and renders the remainder more unfit for reſpiration, in proportion to the quantity neceſſary to ſupport combuſtion; for reſpiration and combuſtion can only take place where there is a due ſupply of the oxygenous portion of the atmoſphere. A fire is, therefore, to be conſidered as deſtroying as much air as a certain number of living beings would do in the ſame time. A much better way of accounting for the good effects of fires, is their power of drying up moiſture. We have contended, that moiſture thrown upon the decks, or

in any other way coming in contact with the timber, is one of the chief causes of impure air being generated. Fires, as tending to dry it up quickly, must therefore be beneficial, but we can in no other way account for their purifying the air, unless by rarefaction of heat, a new column flows in, for the fire gives out nothing salutary. But there is another way in which fires are useful, whether in damp and cold weather, or when infection prevails in a ship, that is, by supporting the heat of the human body, which is highly necessary in the winter season, when low contagious fevers are most prevalent. In such situations, the large stoves and hanging fires become requisite, by supporting the excitement of the body, and in this manner we consider them as preventives of infection; for warmth in all its forms, provided you breathe a pure air, is a chief support of animal life.

Mr. Bell of the Bellona, in his report for May 1800, makes the following judicious remark on this subject: "The general good state of health "of the ship's company, I think we principally "owe to the unremitting attention paid by the "executive officers to *dryness and ventilation*. "Much larger fires than I have ever seen in any "other ship, are kept constantly burning in damp "or rainy weather, and after washing the lower "decks. The *grates* are of a particular construc-"tion, (similar to those used by coopers for burn-"ing the inside of casks,) they have the advantage "of holding a large quantity of fire, and throw the "heat to a very considerable distance in every di-"rection." It will be readily perceived, that *grates* of this form are much beyond the *stoves* usually employed, where the greater part of the heat passes up the vent. They ought to be lighted above

above deck, and kept there a little while, till the fire burns clear, and the ſmoke in no danger of blackening the white-waſh, which ſhould never be ſoiled.

Next to fires for ventilation, is the employment of fumigation. This proceſs has earneſtly engaged the attention of officers in the Britiſh navy, from the earlieſt records of ſervice to the preſent times. And now that chemiſtry has proved its falſehood, the practice has been reluctantly abandoned, ſo ſtrenuouſly is the human mind attached to ancient prejudices. A new form of fumigation has been introduced among us in the courſe of the preſent war, more highly recommended indeed than ſome preceding fumigations, but ſavouring as much of empirical principles. This is the nitrous fumigation of Dr. J. C. Smyth, recommended in the inſtructions given by the Board of Sick and Wounded to navy ſurgeons.

I ſhould have thought this quackery unworthy of notice in this part, as it is fully diſcuſſed in its proper place, were it not to guard officers againſt ſome erroneous notions that are apt to impoſe on common obſervers. It has been remarked, that during the employment of this vapour, offenſive ſmells diſappear, which has artfully been conſidered as purifying the atmoſphere. Thus, a diſagreeable flavour is corrected to the organs of ſmell, while a poiſonous vapour that has no ſmell, may ſtill remain in the ſurrounding air. The following letter from a valuable and intelligent officer, illuſtrates my opinion better than any comment I can make.

"Sir,

Atalante, Spithead,
Aug. 5, 1799.

"The second volume of your Medicina Nautica having fallen into my hands, I observe you therein express a wish of general communication on its various subjects.—As a total want of chemical knowledge may have led me astray, in considering the circumstance I am going to relate to you, being worthy your notice—I shall briefly add it, as I am sure you will accept the intention as it is meant,—be it right or wrong.

"The Atalante, during the winter's cruize, made a spell at the pump necessary every four hours, and this for a period of three months.—Of course, the timbers, ceiling, &c, of all that part the water reached, were fully saturated, but from a constant supply did not become offensive in smell.—After refitting at Plymouth, the leak did not totally subside, and she yet made sufficient to keep her sweet.—The latter end of June, I arrived at Spithead, and continued awaiting orders till the 18th July, being the whole time fine calm weather. The leak during this period ceased, and in five or six days the bilge-water was intolerably offensive.—The only purifier in our possession was fire. The Atalante having no cistern, or cock to let in water, an hanging stove was placed, during seven hours, in the well, for eight successive days; during which the smell rather increased, and it had proceeded to turn the paint in my cabin, and the gun-room, and was literally dreadfully bad. My uneasiness at the probable consequences to the crew, led me at last to try the nitrous gas, although I had heard it much spoken against. On finding its effects throughout the 'tween decks

"and

" and cabin, I determined to put it in the well;
" and in order to give it fair trial, directed the
" fire to be discontinued; which, after eight days'
" use, (and I visited it myself,) the air would not
" admit being put down to the bottom *at once*,
" but by degrees, in the course of an hour.—
" Using the nitrous gas twice a-day in the well, for
" four days, without any fire, completely took
" away all the smell, *and the effect on the paint*
" *ceased.*—We remained at Spithead three days
" after; used no fire there, or nitrous gas, and
" had *scarce any* return. On going to sea we
" sprang a fresh leak, and of course I have had
" no opportunity of trying it again, being quite
" sweet, the water coming up neat as imported
" from alongside.

" It appears from this statement, that the nitrous
" gas had not only dissipated the offensive smell,
" but positively purified the air, by the effect on
" the paint ceasing. As I learn, by the language
" of Professor Mitchell, the turning of the paint
" to proceed not from ' an effluvium of a fœtid
" nature, without a particle of infection.' Vide
" Appendix, page 297; but from " pestilential
" steam;'—' a thickened vapour.' Page 291.

" I have thus fully stated it, that you may be per-
" fect master of the case, to enable you to point out
" some cause of dispersion that has escaped me, and
" which I shall feel obliged by your communicat-
" ing. I take the liberty to add, that numbers
" like myself, perfectly ignorant of chemistry, and
" its language, would reap an additional benefit from
" the perusal of your works, if a general explanation
" of terms was added. I am, Sir,

" Your very humble servant,
A. Jn. GRIFFITHS."

Dr. Trotter.

We thus obſerve, that the Captain thought his atmoſphere in the ſhip fully pure, becauſe the ſmell of the *bilge water* diſappeared. But it is demonſtrated above, that the moſt dangerous effect from foul air in the well, is from the *fixed air, or carbonic acid gas*, and not from the *inflammable air*, or *hydrogenous gas*, which riſes upwards, and blackens the paint, while it produces a bad ſmell. The vapour of the nitrous acid undergoes chemical changes, by coming in contact with this offenſive vapour of bilge-water, but effects no change with the carbonic acid gas, which was probably accumulated in great quantity in ſome part of this veſſel's hold, and would only be diſlodged by the pure water, which was taken in at ſea by means of leaks. To a perſon unacquainted with chemical attractions, ſuch ſudden changes as theſe appear wonderful, as the ſenſe of ſmell only perceives the difference. How often do we obſerve in a warm room, crouded by a number of people, when any delicate lady faints away in conſequence, that every perſon round her is laviſhing ſcents, ſuch as lavender ſpirit about her, becauſe they think them reviving: but a ſingle breath of pure air from a window, anſwers the purpoſe better, becauſe the fainting was owing to the deficiency of that in the inſpired air of the room. It was no ſurpriſing thing for me to read the account from this officer, when we have ſeen and read ſo much from phyſicians and ſurgeons who ſpeak of bad ſmells being corrected, and the air purified by fumigations, when it ought to have been done by ablution. I think there is nothing ſo unpardonable as to allow filth to accumulate, till it excites offenſive effluvia, and then to be corrected by chemical agents. The practice which I pointed out to this officer was, to pour water into his well from above, as he had no pipes

pipes to let it in through the bottom, and then to pump it out. This was deſtroying the ſource of the noxious exhalation both above and below; whereas his nitrous vapour muſt be kept in conſtant employment, as the ſupply of the inflammable air from the bilge-water was going conſtantly on, and might, under the circumſtances mentioned, be conſidered as a permanent laboratory while the ſhip lay at anchor, and did not leak.

Yet it is ſingular, that Captain Griffiths did not attempt to diſlodge the bilge-vapour by windſails, which would have done it effectually. But it is to be explained, from his attention being entirely engroſſed by fumigation; an effect common to all quack medicines, even in the hands of diſcerning people, ſuch as Lords, Biſhops, Judges, &c. who thus lend their names to the *charlatan* advertiſements of the day.

Let it therefore be carefully attended to, that while officers perceive bilge-water offenſive, there is beſides the vapour which diffuſes the diſagreeable ſmell throughout the decks, another vapour that, from its ſpecific gravity, always occupies the loweſt ſtratum, which has no ſmell, but is fatal inſtantly whenever a human being, or any other animal opens its mouth to take it in; they are produced at one and the ſame time, and the one can never be preſent without the other.

Ships built by contract for Government ſervice, are commonly of green timber. Theſe ſhips are always unhealthy in proportion. A conſtant ſteam of impure vapour is exhaled from the timber above and below, which undergoing decompoſition, aſcends in the form of hydrogenous gas, vulgarly called bilge-vapour, while another portion of the moiſture either ſeizes the iron-work, and converts it into ruſt, or attaches itſelf to the carbonaceous

matter of the hold, and forms carbonic acid gas, or fixed air, which is the vapour that floats on the top of the water in the well, being the loweſt part of the ſhip, as it ſinks to the bottom from its gravity.

In addition to this article, we are of opinion, that the cables, and all kinds of ſtores, ought to be carried above and expoſed in the open air as often as poſſible. Sails are very liable to decay in a warm room, if water comes among them, which might always be ſaved by punctual attention in this duty.

Some part of the proviſions, ſuch as cheeſe and bread, often require airing on deck for their preſervation: it is when they begin to decay that they leſſen the purity of the atmoſphere.

The following letter was addreſſed to Mr. Nepean, with a view of improving the ſtate of the hulks, where the people are lodged while their own ſhips are in dock, or undergoing a repair and refit. It is more nearly allied to this part of our ſubject than any other, I have therefore given it a place.

" Sir, Spithead, Feb. 28, 1798.

" Having frequently remarked that the Ships' " companies while lodged in hulks, during the " docking of their own ſhips, had been ſufferers " in point of health, from the imperfect accommo- " dations, I have been induced to examine them, " for the purpoſe of trying whether ſome im-

" provement

" provement might not be ſuggeſted to remedy " this evil.

" The irregularities which ſeamen are apt to " commit while in harbour, are no doubt a very " principal cauſe of diſeaſe; but in the winter- " ſeaſon we know, that ſlight fevers, rheumatiſms " complaints in the breaſt, ſore throats, &c. are " often to be traced to a wet, damp, and unven- " tilated hulk: and as theſe veſſels have no com- " modious ſick-berth, there is too often a neceſ- " ſity for ſending them to the hoſpital, a practice " always to be avoided in a well manned ſhip. " Some of theſe hulks are alſo too ſmall for the " crew of a three decker: the Queen Charlotte's " people are at this time confined in too nar- " row a ſpace. Breathing for a length of time " an impure atmoſphere prediſpoſes the body " to a condition that renders ſea-diet more eaſily " productive of ſcurvy, and defeats other means " of prevention.

" 1ſt. More ſtrict regulations are wanting to " enforce cleaning the decks of the hulks; they " ought to be white-waſhed five or ſix times a- " year.

" 2dly. Every deck ought to be fitted with " ſhafts for conducting upwards the irreſpirable " air.

" 3dly. Glaſs, or bunting ſaſhes, ought to be " fitted for each port, part of which might open " by a hinge, to ſhut when it rains, but to open " in fine weather.

" 4thly. An awning of pitched canvas over the " forecaſtle, with ſide curtains, that the hammocks " may be brought on deck every day.

" 5thly. A fixed ſick-berth in the galley, to " take in one round-houſe, as in commiſſioned " ſhips.

" 6thly.

" 6thly. The orlop deck to have large ſcuttles " fore and aft, as in priſon ſhips, &c. and to be " white-waſhed with the others.

" Ships' companies are often two or three " months in a hulk, during which time much " of the ettiquette of diſcipline is laid aſide, be- " cauſe the preſent confined and naſty ſtate of " the hulk renders perſonal cleanlineſs impract- " icable, and with this health, order, and mora- " lity ſuffer.

" I have therefore to requeſt you will be " pleaſed to communicate theſe remarks to their " Lordſhips.

" T. T."

To Evan Nepean, Eſq.

MEDICINA NAUTICA.

VARIOLA AND VACCIOLA.

IN the former Volumes of this work, from the frequent occurrence of ſmax-pox in his Majeſty's ſhips, that diſeaſe was admitted among the number of thoſe which required our animadverſion. Our advice, though not followed up with that zeal and attention which the magnitude of the object pointed out, has however done much good; and excited a ſpirit of obſervation towards the early ſuppreſſion of the infection, that had been hitherto but little regarded.

Within the laſt three years of the war, and particularly in 1800, the inſtances of variolous infection being brought on board of the ſhips of the fleet were more numerous than on any former occaſion. The diſeaſe at that time, in the natural way, was very general in the populous towns of Plymouth, Plymouth-Dock, and Stonehouſe. The ſeamen, while on ſhore at liberty, were more than uſually expoſed, from the number of public houſes that had lately been opened in the vicinity, and multiplied the ſources of this as well as all other kinds of infec-

infection. I have only marked a few of those instances, as they appeared in the general history of health, where something particular had happened. In a multitude of them the infection had been carried on board by children in their mother's arms. Surely it ought to be strongly enforced in our code of naval discipline, to prevent the introduction of small-pox. The Master at Arms usually attends at the gang-way to search the women for spirituous liquors; and at the same time he might with equal ease inspect the children, and where any suspicious eruptions, such as the small-pox, measles, or itch, appear, the surgeon of the ship ought to be called to decide on the propriety of admitting the woman or child. Where the disease is in danger of extending, inoculation cannot be too early practised.

A fact has been lately communicated to me, of the variolous infection being carried from England to Jamaica, and back again, in a chest of clothes; which had been sent from a house in Liverpool where the small-pox prevailed, but had not been in contact with the diseased body. The chest had not been opened till it was returned, and the small-pox appeared at the usual time, without the least doubt of being produced from this source.

Our experience continues to confirm the opinion formerly given, that small-pox cannot give out infection till *the third day*. This fact is of much importance in easing the minds of those who are in danger; and affords some certainty to means of prevention and early separation.

VACCIOLA.

VACCIOLA*.

While we were compiling our former Volume, a diſcovery, the moſt important in the annals of medicine, had juſt been announced to the world; that a diſeaſe in cows was *a preſervative againſt* variolous infection. The manner in which this diſcovery was given to the public, by the celebrated author Dr. Jenner, was ſufficient to rouſe and command the attention of mankind, as well as the medical profeſſion. That phyſician, by prudence and perſeverance, not always united with new inventions, brought forward at the ſame time ſuch a maſs of evidence to defend his opinions, that after four years progreſs the ſubject has ſcarcely afforded any thing new.

The Jennerian inoculation was not long confined to Great Britain. The phyſicians of France, Germany, Italy, &c. with a promptitude and ardour which well became the diſcovery, embraced the cauſe, and extended the practice with equal rapidity and ſucceſs. In Scotland, however, from what reaſon I know not, its progreſs has been marked by much cold indifference and neglect.

The names of the moſt reſpectable phyſicians and ſurgeons in London were quick in giving the moſt honourable teſtimony in ſupport of the new inoculation, with a view of impreſſing ſociety with its ſuperior utility and importance, which certainly had the beſt effect. Amidſt this cheerful countenance of individuals, a ſullen ſilence was ob-

* This ſubject ſhared our attention in the preceding Volume, very ſoon after it had been announced to the world: and as our opinions were conveyed to the higheſt authorities, the hope was indulged of the navy being quickly benefited by Dr. Jenner's diſcovery. *Vide* Vol. II. Art. *Small-pox*.

ſerved

ſerved by a *certain body of* phyſicians, whoſe taſk it is perhaps more than any others, in their collective capacity, to watch over the health and ſafety of his Majeſty's liege ſubjects; as being legally inveſted with authority for that purpoſe. I ſhould be ſorry to ſay, that theſe gentlemen are ſo tinctured with a corporation ſpirit, lulled in the pleaſures of a wealthy and luxurious metropolis, or fettered by the emoluments of craft, as to forget what they owe to the dignity of the medical profeſſion, as well as to ſociety. Certain it is, that by the ſupine and tame diſpoſition of this body, the quackery of the preſent day has made ſuch alarming progreſs as to become a domeſtic evil and a national diſgrace. It is from this example that the civil magiſtrate ſlumbers at his poſt, and a modern newſpaper is now become ſuch a vehicle of obſcenity, from empirical advertiſements, that a modeſt female can no longer look it over, either as an innocent amuſement, or to learn the harmleſs faſhions of dreſs, without meeting with expreſſions that delicacy cannot behold without a bluſh. Quack medicines may aſſiſt a budget of taxes, but woe muſt befal that nation which permits them at the expence of female virtue.

To the demeanor of this body alſo may we not, in a great meaſure, account for the delay of conferring civic honours and a penſion on the immortal author of the vaccine inoculation. Surely the accompliſhed Mr. Addington, the ſon of a phyſician, and a polite ſcholar, cannot be long indifferent to ſuch tranſcendant merit. Titles and fortunes have rapidly crowned the heroes of the war; let therefore the Miniſter of peace haſten to reward the benefactor of mankind with a ſuitable dignity. If, however, honours of this kind are to be denied on the occaſion, let not Dr. Jenner

repine at the loſs of what could neither add or impair the value of his diſcovery. Conſolations much more gratifying are within his reach: the fond mother, as ſhe careſſes her infant charge reſcued from the danger of a terrible diſtemper by his invention, will bleſs the name of Jenner; the beauties of diſtant ages, ſaved from deformity by his art, will weave garlands for his buſt; and what the hiſtorian of medical ſcience may forget to record, the ſongs of future bards ſhall add to his fame!

While the vaccine inoculation was thus beginning, and meeting very general ſupport, the medical officers of the Britiſh navy were not inattentive to the ſubject; and very early attempts were made to introduce it among the ſeamen. But all theſe have been only partially followed up; and at the time I am writing it ſeems entirely given over. In the ſummer of 1800 I requeſted permiſſion of the Admiralty to introduce it into the ſhips of the fleet, with a view of procuring full authority, that all prejudices might be obviated which could riſe againſt it. This was however not thought to be the proper channel for ſuch an undertaking; it fell into other hands, and, as was foreſeen, ſoon became neglected. It would have been an eaſy matter for me to have directed the practice in every ſhip as ſhe arrived from ſea. In thoſe inſtances where the variolous infection had been carried on board, and where I perſonally addreſſed the ſeamen on the ſafety of the vaccine inoculation, the meaſure was eaſily accompliſhed. Much good might therefore have been done with very little trouble: of two thouſand men and upwards in the fleet who never had the ſmall-pox, ſcarcely two hundred were inoculated with the cow-pox; and the remainder are left ſtill expoſed to

to a dangerous diſeaſe, whenever it may come in their way.

For an account of the public compliment paid by the medical officers to Dr. Jenner, the reader is referred to the occurrences of the fleet.

In a communication on the ſubject of the vaccine diſeaſe, by my reſpected friend Mr. Robert Carruthers, late of the Unicorn, and now ſettled at Wareham in Dorſetſhire, I have met with the following remark in confirmation of Dr. Jenner's doctrine: "I can now affirm," ſays Mr. C. "that "my late father, a very old ſuperannuated ſurgeon "of the Royal Navy, and myſelf, have inocu- "lated *many hundreds* for the ſmall-pox, who "had *previouſly* had the vaccine diſeaſe, none of "whom we could ever get to receive the vari- "olous infection. I have always obſerved, that "thoſe who have had the ſmall-pox previous to "the vaccine diſeaſe, have the latter very mildly; "while, on the contrary, thoſe who catch the "vaccine diſtemper firſt, have it extremely "virulent."

On the ſubject of the cows being infected by the greaſe of horſes' heels, Mr. C. makes the following obſervations: "Having for ſome time paſt "been buſily engaged here, and in this neigh- "bourhood, in viſiting many ſick at the different "farms and dairies, where the cows were all "afflicted with this diſtemper, the proprietors of "which, upon my interrogating them, could not "inform me how they came to be affected: "but on caſting my eyes round the different "fields, I ſaw in each a greaſy-heeled horſe paſ- "turing with the cows, who were not in the leaſt "diſeaſed previous to theſe horſes feeding among "the cattle. By which I am inclined to think "with Dr. Jenner, whom I have not the honour

"of

" of knowing, that the cow-pox takes its origin " from a greaſy-heeled horſe. However unplea- " ſant the idea is, I am of opinion, at preſent, that " the cows, by lying down to ruminate, receive " the virus, which has fallen from the horſes' " heels, by their teats coming in contact with the " contaminated graſs.—The cows may, I verily " believe, be afflicted with the diſtemper more " than once: the months they are moſt likely to " be diſeaſed in, are from February to October; " for I never ſaw or heard of any being much " afflicted in any other months of the year. It " appears from this, that there is a certain ſeaſon " during which the diſtemper is chiefly pre- " valent."

The laſt remark of Mr. Carruthers tends to prove, that the ſummer months give ſome predispoſition to the diſeaſe. Can the heat of the ſeaſon have any effect in foſtering, as it were, the inflammatory diſpoſition, which attends the inſerted virus? Yet, it is generally obſerved, that the variolous infection is chiefly prevalent in the winter months.

The vaccine inoculation was very early introduced into Plymouth, and Plymouth Dock. In the latter town Mr. Dunning, a gentleman of diſtinguiſhed literary as well as medical abilities, entered upon the practice with all the warmth of a feeling heart and an enlightened mind. This gentleman ſoon favoured the world with ſome important truths on the ſubject; and his example confirmed the New Inoculation throughout the weſt of England *. Our ſurgeons, as they arrived

* *Vide* Dunning on Cow-pox.

from ſea, became thus familiarized to the diſcovery, and began to practiſe at firſt with ſome earneſtneſs; but the authority which I requeſted for myſelf not being granted by the Admiralty, I could interfere no farther; and, with regret, I beheld a plan pregnant with great benefit to the public and individual decline among our ſhips.

MEDICINA NAUTICA.

PNEUMONIA—CATARRH—OPTHALMIA.

IN the variable climate of the Channel, and perhaps in all parts of the home-ſeas, diſeaſes of the inflammatory claſs are very frequent in ſhips. Sudden changes of temperature in the atmoſphere, whether from warm to cold, or the contrary, have been remarkably productive of theſe complaints; and I have generally obſerved, if they occur in the ſummer months, they act more effectually than in winter.

A ſhip's company lately returned from a tropical ſtation, is very liable to catarrhs and bowel complaints for ſome time in the Channel cruizes. The beſt preſervatives againſt theſe diſeaſes are, ſufficiently warm clothing, and attention on the part of officers, to prevent their expoſure to unneceſſary cold or rain in bad weather; and to check the pernicious cuſtom of waſhing decks, when they cannot be immediately dried.

Theſe diſeaſes have on particular occaſions become ſo general in ſhips, as to be conſidered of a contagious nature; and the vulgar appellation of influenza, with little ſcientific diſcernment, has

ſometimes crept into the medical vocabulary of the fleet. The only epidemic catarrh which has ever occurred in the Channel this war, happened in February 1795, as related in our firſt Volume.

But, in a great meaſure independent of the condition of the atmoſphere, catarrhs, pulmonic affections, and opthalmias have, at different times, appeared in numerous caſes in ſhips. This has chiefly happened ſince May 1800; and the cauſes of it are not beyond explanation.

When Lord St. Vincent aſſumed the command of the Channel fleet, many changes were made in the diſtribution of the ſhips, and a degree of vigour and activity was infuſed into the operations of the whole, that had not been known under the preceding Commander in Chief. There appeared indeed a want of his ſuperior talents in the home-ſeas; and the effects of his deciſion and promptitude were ſoon manifeſted in the condition of the enemy. From that period to the concluſion of hoſtilities, the French ports were ſo completely blockaded that nothing got out, and the harveſt of prize-money was therefore annihilated. Such vigorous and enterprizing meaſures neceſſarily called forth unuſual exertions on the part of the officers and ſeamen. A better look-out, more frequent manœuvres and evolutions, with ſpeed and correctneſs in the execution of theſe, kept the ſhips' companies more frequently aloft, and often expoſed them to ſevere and long fatigue. To all theſe may be added, much longer cruizes than had been hitherto made in the Channel; with only a few days to refit when ſent in, which rather increaſed than diminiſhed the labour of the people.

In ſuch ſituations of naval ſervice, the able officer of a ſhip will be diſtinguiſhed from the man of inferior abilities; and as far as it is poſſible, in the

the execution of duty, he will endeavour to give his people no unneceſſary toil. The rule for that muſt always be, that the refreſhment from ſleep at night ſhould be equal to the fatigues of the day. The ſtrength of a ſhip's company will thereby be reſerved for proper occaſions, for the hour of battle, or ſevere gales of wind. If the vital part of the machine was ſtudied by ſome of our young officers with a little more attention, theſe parts of duty would go better on than they do at preſent. I believe, however, that ſuch a calculation as I am now making, was little thought of in the operations of 1800. Zeal, activity, and perſeverance, make a valuable ſyſtem of naval tactics at all times; but it is the province of the diſcerning and intelligent mind, to calculate how long animal life can ſuſtain this expenditure of its powers without recruit. Iron, timber, and hemp, in the conſtruction of the veſſel are quickly worn out by friction, and muſt be occaſionally renewed, as is well known to the weakeſt underſtanding. Let fleſh and blood therefore be duly ſupported by food, and regularly refreſhed by ſleep, and ſufficient ſtrength of muſcle will never be wanting on urgent ſervice. The nice criterion of diſcipline is to give ſeamen full employment without making duty a toil, and in all ſituations to remember they are men!

The body thus exerciſed is alternately heated and chilled; now drenched with ſweat, now ſhivering with cold; till weakened with long continued hard labour, it becomes eaſily affected by the ſlighter changes of temperature. Coughs, catarrhs, ſtitches, dyſpnœa, ſtrictures acroſs the breaſt, attended with more or leſs of fever, are the conſequence.

The ſymptoms which more particulary mark pulmonic inflammation, are thirſt, great heat, oppreſſion, and pain of the breaſt, much increaſed in inſpiration; fluſhing of the countenance, and ſometimes headach and drowſineſs. Pulſe ſtrong and hard, from a hundred to a hundred and ten, and the urine high coloured.

While ſome complain of catarrh and peripneumony, others are more troubled with inflammations of the *tunica adnata* of the eye, occaſioning ſevere headach, acute pain of the globe of the eye, with profuſe diſcharge of tears, inability of viewing the light, and a ſenſation of ſomething like ſand raſping the ſurface of the eye.

The ſhips of the advanced ſquadron, which were kept conſtantly at the very entrance of Breſt harbour, had, from the nature of their duty, a much larger proportion of theſe complaints than others which compoſed the body of the fleet off Uſhant, whoſe people were leſs expoſed to weather and ſevere labour. Cynanche tonſillaris was alſo frequent on theſe occaſions, but, like others, readily yielded to common treatment *.

But although the campaign of 1800, exhibited in moſt of the ſurgeons' returns an unuſual proportion of inflammatory diſeaſes, yet in the very month that ſome reported an influenza to prevail in the fleet, others remarked that their ſhips were never ſo free from catarrhal affections: among the laſt, was Mr. Bell of the Bellona. In the month of Auguſt and September catarrhs were frequent in the Naiad, not leſs than one hundred and ten, from the 20th of Auguſt to the 20th of September.

* *Vide* Mr. Outram's report for May 1800, among the Occurrences.

But

But in the Amelia the diſeaſe was not remarked till November, though cruizing at the ſame place, when eighty-nine appeared in the courſe of that month. Such a difference in the condition of two ſhips at one time, is only to be explained from the different expoſure to weather in their reſpective employments.

Mr. M'Arthur's account of the diſeaſe on board the Naiad, is thus detailed:

" This month an epidemic catarrh appeared on " board this ſhip, which at firſt was ſo rapid in its " progreſs, and attended with ſo unuſual a degree " of fever, as to cauſe a conſiderable alarm. In " one inſtance delirium had taken place; but this " only ſeemed to be the effects of an aggravated " ſtate of the complaint on a weakly habit. For " ſome time paſt it has been on the decline, and " indeed may be ſaid to have nearly ceaſed, for " the greater number of thoſe upon the ſick-liſt " have been ill a conſiderable time, and had pre- " viouſly complained of a chronic cough, or ſlight " aſthmatic ſymptoms. Notwithſtanding, ſhould " we be expoſed to bad weather, it is very pro- " bable that it will paſs through the whole of the " ſhip's company before it finally diſappears.

" The ſymptoms were as follows: A ſevere pain " of the forehead acroſs the eyebrows, as if in " the frontal ſinus. A red watery eye, with a " ſenſation of fullneſs in the eye-balls, as if too " large for the ſockets. A coryza, a ſlight ſore- " neſs of the throat, the uvula velum pendulum " palati, and adjacent parts appearing inflammed " and relaxed, but the tonſils were ſeldom en- " larged. A cough, with pain under the ſternum " or ribs, and a pain and oppreſſion in the region " of the ſtomach, for the moſt part inclining to the " right ſide, and reſembling the pain felt in the

" kind of jaundice proceeding from obſtructions " of the billiary ducts, pains of the rheumatic " kind, affecting every part, but more eſpecially " the back and loins. The tongue was covered " with a whitiſh mucus. Thirſt moderate. The " ſkin dry, and imparting a fever heat to the hand. " The pulſe quick, and generally full. There was " alſo a deſpondency of mind, and the utmoſt re- " luctance to motion. Theſe ſymptoms were pre- " ceded by cold ſhivering, and for ſome days " coſtiveneſs. On the firſt attack, an emetic of " the tartarite of antimony was given, which al- " ways brought up a very large quantity of bile; " after the operation of the emetic, the bowels " were well opened by the infuſ. ſenæ natron. vit. " colat. jalap. &c. but afterwards at the recom- " mendation of Mr. Beard, ſurgeon of the Royal " George, I uſed calomel with the beſt effects. " In moſt caſes it was unneceſſary to employ any " medicine after the operation of the emetic and " cathartic, farther than amuſing them with a " *placebo* for a few days, while they were recover- " ing their ſtrength, and giving them ſome doſes " of the cinchona previous to their return to " duty.

" Where there was much cough, great be- " nefit was received from a free perſpiration, " which was commonly induced by drinking " freely of ſome diluent liquor, particularly wa- " ter-gruel, taking at the ſame time an antimonial, " conjoined with an opiate. In ſome inſtances, " where the pneumonic ſymptoms were ſevere, " blood was drawn from the arm, and a bliſter " applied to the affected part; but the blood " never exhibited any ſigns of inflammation. It " was with the greateſt reluctance the ſick were " prevailed upon to leave their hammocks, and

" required

" required every cheering and conſoling expreſſion
" to make them walk about; but it is aſtoniſhing
" the ſudden and ſalutary effects the cold air had
" upon them; on this account, the whole of the
" half deck was appropriated to them, with a
" view of having them conſtantly under our eyes,
" and to keep them walking about. It may be
" a queſtion, if ſome of theſe had been permitted
" to keep their beds, whether the complaint would
" not have terminated in a continued fever. The
" ſick were alſo made to wear flannel waiſtcoats
" next the ſkin, and the ſame recommended to
" the reſt of the ſhip's company. The Admiral
" took every opportunity of ſupplying us with
" freſh beef and vegetables; the former was wholly
" appropriated to the ſick. Every care has been
" taken to keep the ſhip clean, dry, and well
" ventilated. The decks were not waſhed, but
" rubbed with ſtones and dry ſand. All the ſtore-
" room doors were kept open, and fires placed in
" the holds, tiers, &c. &c. and the men pre-
" vented, as much as poſſible, from lying down
" upon deck in their watch, expoſed to the dew.
" Theſe means are ſtill perſiſted in, but from this
" I would not have it inferred that there is any
" idea of the complaint originating from dampneſs
" of the ſhip, for the decks were ſeldom waſhed,
" but ſcraped: fires were frequently between
" decks, and windſails pointed down the holds,
" and into the tiers, and the weather for a conſi-
" derable time before was dry; therefore, in ac-
" counting for the appearance of this complaint, I
" can only attribute it to the influence of the at-
" moſphere, and not to any local cauſe; but it is
" very probable, the exceſſive intemperance of this
" ſhip's company, when in port, may have prediſ-
" poſed them to catarrh. On the 20th, 21ſt, and

" 22d

" 22d of Auguſt, there was off Breſt, a ſtrong " cold northerly gale, and the air contained a " great deal of humidity. The weather then ſud- " denly became warm, and ſoon after this com- " plaint appeared. On the 28th of Auguſt, in the " morning, we had three men with catarrh upon " the ſick-liſt, and on the 1ſt of September, we " had ſeventy-eight, the officers have ſuffered " equally with the men; and latterly, many were " ſlightly attacked that did not require to be put " upon the ſick-liſt: every ſymptom was relieved " by a briſk cathartic. We are now between " twelve and thirteen weeks at ſea, but the ſlighteſt " ſymptom of ſcurvy has not yet appeared amongſt " our people. Indeed they have every advantage " of good clothing, and have the means of laying " in a ſtock of tea, ſugar, potatoes, &c. before " they proceed to ſea; and, I believe, at this mo- " ment, there is not a meſs in the ſhip that has " not tea and ſugar. It would have been happy " for themſelves had they on every occaſion made " equally ſo good a uſe of their money *."

Mr. Morgan of the Amelia, in his report for November, gives the following account of catarrh.

" A catarrhal complaint this month, reſembling " the influenza, made its appearance on board of " us, ſoon after reaching our ſtation off Breſt. " The ſymptoms were in general chillineſs and " ſhivering, ſucceeded by a hot fit, pains alſo in " different parts of the body, and in particular the " head, and ſometimes the eyes, cough, and ſore- " neſs in the throat, and ſtricture acroſs the tho- " rax, with ſome difficulty of breathing. The treat-

* This ſhip was one of the four frigates that captured the two Spaniſh regiſter ſhips.

" ment,

" ment, antimonials with opiates, plenty of barley-
" water acidulated with lemon-juice, drank warm,
" where the pain and ſtricture in the thorax, bliſ-
" ters, and to relieve the cough, lac ammon. with
" ox. ſcillæ, or any other pectorals, with tinct.
" opii occaſionally. The two men ſent to the
" hoſpital were attacked with more violence at
" firſt than any of the reſt, their coughs were ex-
" ceedingly troubleſome, and a conſtant pain in
" the thorax, with difficult reſpiration, quick pulſe,
" and other ſymptoms of pyrexia; they were bled
" at the beginning, bliſters applied as near the
" pained part as poſſible; pectorals, combined
" with different preparations of antimony, and
" opiates, &c. &c. were given, but with little
" benefit; and, on our return, they were ſent to
" the hoſpital as fit objects. The relapſes were
" frequent, from the cold weather, but the ſymp-
" toms were in general of a milder degree."

" The cauſe of this complaint appears to me to
" be occaſioned by the ſudden tranſition of the
" weather, our laſt cruize for nineteen weeks we
" had uncommonly fine and pleaſant, and ſince
" we returned to port, the men were conſtantly
" employed both night and day, that we felt but
" little of the cold till we got off the Black Rock,
" there we found the weather exceedingly cold;
" and, in the courſe of a few days, there was hardly
" a man (nor an officer), but were attacked in
" a more or leſs degree. The above are only
" thoſe who were reported in my daily ſick-liſt,
" and free from duty."

Mr. Simpſon of the Fiſgard, commanded by Captain Martin, ſpeaks of catarrhal and bowel complaints appearing about the beginning of October, as uſual at that ſeaſon of the year. This ſhip was cruizing off Ferrol; the diſcipline here was

was of the firſt claſs; the human being received the firſt attention, as being the main ſpring of all naval operations, and the people's health was watched with the care and vigilance of paternal affection.

" About the beginning of October, catarrh, " with violent bowel complaints, grew rather fre- " quent on board of us. At one time they " amounted to twenty, and of theſe ſome ſuffered " conſiderably. It generally began with a pain " in the forehead, cough, pains in the breaſt, ſto- " mach, ſides, and ſhoulder; a particular painful " ſpaſm about the *ſcrobiculus cordis*, bowels diſ- " tended with flatus, and a frequent painful at- " tempt to go to ſtool without effect. In one or " two caſes, there was at the commencement, a " diſpoſition to ſyncope. With others, there " were nauſea and vomiting. The urine was " paſſed with difficulty, and in very ſmall quan- " tity, ſometimes perfectly limpid; at others, " deeply tinged. Epiſtaxis often accompanied " this ſtage of the diſeaſe. In the worſt caſes " there was a yellowneſs of the whole ſkin, and a " dull lumpy feel in the right lobe of the liver. " The worſt caſes had generally been coſtive for " five or ſix days before they complained.

" To every perſon, as ſoon as the complaint was " made known, I gave an emetic: but as I found " the action of vomiting difficult to excite in ſome " who were before much inclined to vomit, I had " to repeat it ſometimes thrice before I ſucceeded. " When the emetic operated, they always felt " relief, a ſoreneſs at ſtomach only remained. " The emetic was followed by a cathartic, gene- " rally pulv. jalap. the neutral ſalts agreeing leſs " with the ſtomach than in common. If the eme- " tic and cathartic operated duly, all the ſymp-

" toms

" toms generally diſappeared, unleſs the cough " remained a few days. In a few caſes that were " diſpoſed to relapſe, four grains of calomel, " given twice a-day, entirely carried off all ten- " dency that way. I alſo had occaſion to bliſ- " ter a few, when there remained deep-ſeated " pains in the breaſt, ſide, or ſhoulder."

In this narrative, Mr. Simpſon does not mention the ſtate of the pulſe; but it is evident, that the fever attending the catarrhal affections, &c. was of the typhoid kind, and the addition of opiates, after clearing the ſtomach and bowels, would have much aſſiſted the cure.

On board the Montague, commanded by Captain Knight, catarrh was rather prevalent in the beginning of September. This ſhip was one of the inſide ſquadron, and was uncommonly active. This ſcientific officer at that time employed himſelf in making ſurveys of the entrance to Breſt, and diſcovered a fine roadſtead where our men of war afterwards took ſhelter in ſevere gales of wind.—Mr. M'Donald ſays:

" After leaving port, from having only two or " three men in the liſt, it increaſed in the courſe " of two days to fifty; two-thirds of whom were " catarrh, and ſome had it with aggravated ſymp- " toms. No deaths enſued, and it readily gave " way to emetics, opiates, and pectorals, aſſiſted " by plentiful diluting liquors.

" This catarrhal affection has been, I under- " ſtand, very general in the fleet, and known by " the popular name of influenza, and ſaid to de- " pend on a certain ſtate of the atmoſphere. Be " that as it may, there is one thing clear, that it is " infectious, as in my own caſe. After having " ſeen the ſick in the morning, I was ſeized with " a cold ſweat, which was ſoon ſucceeded by chill-

" neſs,

" neſs, and general ſoreneſs all over me. My " head ached violently, and there was conſiderable " heavineſs, and a ſenſe of fullneſs over the frontal " ſinuſes: I became very hot, my pulſe beat full " and ſtrong, and there was alſo felt a degree of " fullneſs, attended with heat and pain in the " internal fauces, a cough ſoon ſupervened theſe " ſymptoms.

" Theſe complaints were ſo urgent, that they " confined me two days to bed. I did not uſe " any medicine, but indulged freely in thin dilut- " ing liquors, which induced a copious per- " ſpiration, and ſoon produced a ſolution of the " diſeaſe.

" I have no doubt but you will agree with me, " that this complaint is in ſome degree infectious " in crouded ſituations. It had rained a little the " morning I was taken ill, and the tarpaulin was " laid over the forecaſtle grating to ſave the ſick- " berth from being wet. Thirty men were now pre- " ſent, all of whom I examined, felt their pulſes, " looked at their tongues, and inſpected their " fauces, as ſore throats were common attendants; " when you conſider all theſe circumſtances, you " will readily forgive me for attributing my diſeaſe " to infection."

The number of catarrhal caſes that are mentioned in the Sick Liſt were eighty-ſeven. The Montague, in other reſpects, was wonderfully healthy. But I object to this gentleman's idea of infection. There is certainly no occaſion for attributing his own inſtance of the diſeaſe to that cauſe; for a change of the temperature in the air was more likely to affect him than any of the hardy ſeamen, who are more accuſtomed to ſuch tranſitions. The preceding months, and ſucceeding ſeaſon, till June 1801, produced numerous in-

ſtances

ſtances of catarrh in moſt ſhips. Much exertion of the people, joined to the effects of weather, ſufficiently explain this occurrence, without having recourſe to occult cauſes; as the diſeaſe originates from variations of the excitement, from different degrees of heat being applied to the body.

Let us ſuppoſe a company of ſix hundred men, in a cold froſty day, expoſed for a long time on deck, till their fingers are benumbed, and of this number two hundred run to the galley fire to warm themſelves, all of whom will be ſeized with hot-ach, followed by chilblains and ſores. Under theſe circumſtances it would not be correct in medical language, to ſay that the complaint was contagious, becauſe a number were affected at the ſame time and in the ſame way, for the effect can be explained otherwiſe: ſo it is with catarrh.

In the Atlas, Mr. Johnſtone imputed much of the diſeaſe to the effects of intoxication, as in that condition the people are apt to fall aſleep on the decks at night. Such a cauſe as this will produce catarrhs and other complaints in any condition of weather.

In the month of Auguſt, when off the coaſt of Portugal, Mr. David W. Bell of the Indefatigable, gives the following ſtatement of his ſick, which appears to differ conſiderably from the prevailing catarrh: "About the beginning of this "month a great number of men, and three offi- "cers, were attacked with a ſpaſmodic affection "of the breaſt. The ſymptoms, in general, were, "an oppreſſion about the *præcordia*, great diffi- "culty in reſpiration; and ſome with cough, and "inflammation of the fauces; but in thoſe who "had the latter ſymptoms I obſerved the diffi- "culty of breathing was not ſo great.—Antimo- "nials, with æther, and ſome other articles, were

" exhibited; and in one inſtance blood was taken " from the arm. But nothing ſeemed to anſwer " the purpoſe ſo well as a bliſter to the part af- " fected, which generally gave relief in the courſe " of twenty-four hours. I am at a loſs to account " for the ſudden manner in which this complaint " appeared. We received water at Oporto, and " had refreſhments conſiſting of freſh beef, and " a quantity of Onions. Some of the water, after " being a fortnight at ſea, had a taſte of ſugar of " lead diſſolved in it. At this period we had " damp eaſterly winds after being conſtantly at ſea " for three months."

The Namur had at one time a conſiderable number of catarrhs, and was the firſt ſhip where the diſeaſe was called influenza. This muſt have been ſome weeks before the ſhips mentioned above; but no account of the matter was ſent to me by the ſurgeon. The Princeſs Royal, Mr. Magin mentions as ſuffering from it; but no other three-decker had at that time any unuſual number ill of theſe complaints. Mr. Magin ſays, " When " we ſailed from Cawſand Bay, the ſick-liſt chiefly " conſiſted of thoſe labouring under what I have " called *influenza*, in the above column, or fevers " of the continued kind. The former diſeaſe I " conſidered as contagious. For, beſides the " thirty-eight caſes I have mentioned, (and which " I thought worthy of being entered on my jour- " nal, on account of ſeverity of ſymptom,) twice " that number were ſeized with that complaint, " but in a milder form, and of ſhorter duration. " In all theſe caſes, I have marked the inflamma- " tory ſymptoms ran very high, ſuch as deep- " ſeated and obtuſe pain in ſome part of the breaſt, " like pneumonia, oppreſſion about the præcordia, " and great difficulty of breathing, in two caſes

" threaten-

" threatening immediate ſuffocation. Theſe ſymp-
" toms were attended with a conſiderable degree
" of pyrexia at the beginning, and a hard, dry,
" tickling cough. The pulmonic affection in all
" was only relieved by repeated bleedings; in
" ſome *ad nonam vicem*."

The ſudden appearance of ſo many caſes of catarrh and pneumonia, ſeems to have inclined Mr. Magin to adopt the idea of infection, like Mr. M'Donald of the Montague. When we conſider that there are ſo large a number of men in a ſhip, living in a ſimilar manner, in health, with minds, cuſtoms, and habits, very much alike; it is but natural to ſuppoſe, that when theſe men are all equally expoſed to cauſes of diſeaſe, that they will be affected in nearly the ſame manner, and at the ſame time.

For example, in the variable Channel weather, when a gale of wind comes on, particularly at night, all hands are called to take in ſail, and prepare for bad weather. There is a great deal of work often to be done in a very ſhort time, on ſuch an occaſion; and if it rains, the men being expoſed muſt naturally ſuffer. If a diſcerning officer commands the deck, the evil will be leſſened by the tender concern he ſhows for their ſafety, in directing them to ſhift, and not to lay down, either with wet clothes, or on wet decks. Now, during a repetition of ſuch a duty as this, if thirty-ſix men, in the courſe of a month, are admitted into the ſick liſt, with twice that number more gently affected, for catarrhal and pneumonic affections, ſtill the proportion is not great, and only makes one out of ſeven in the complement of a ſecond rate, like the Princeſs Royal. In Mr. Magin's liſt for October, I find no leſs than thirty-five catarrhs. The ſame ſhip, in the month of Feb-

ruary following, as appears by Mr. Lara's return, had thirty-four catarrhs. But in the laſt inſtance, as in the former, the diſeaſe, moſt probably, was cauſed by variations of temperature, or ſevere duty on the part of the people.

This diſcuſſion is not merely a ſpeculative point; for if it is to be thought juſt that ſuch complaints originate from infection, we may ſeek to *doomſday* before we detect the cauſe, on the one hand, while, on the other, it is before our eyes.

The employment of venæ-ſection in caſes of pneumonia, requires caution and diſcernment among ſeamen. The reflecting ſurgeon will review the preceding condition of his patient's health; the nature of his duty for ſome time paſt; the food he has lived on; the ſeaſon of the year; his habit of body; his length of ſervice in tropical countries; the diſeaſes he has been ſubject to: when he has minutely examined into all theſe circumſtances, the preſent ſituation of the patient will be better diſcovered. The full, ſtrong, and hard pulſe, ſtricture and oppreſſion of the breaſt, with laborious inſpiration, indicate a large bleeding. Twenty ounces taken away at once will have more effect than ſmaller bleedings repeated. It is however ſometimes dangerous to bleed a patient till the ſtricture of the breaſt is removed; venæ-ſection, therefore, ought to be accompanied with the other means for ſubduing inflammation, ſuch as cool air, purgatives that cauſe quick evacuations, cold drink, but above all, the large uſe of the vegetable acid, as lemon juice. A bliſter may then be of much ſervice. The propriety of blood-letting is alſo to be judged of from the time

time the patient has been ill. On the third day it would be imprudent to take the ſame quantity of blood away that might have been done on the firſt: a large bleeding, that would have been ſalutary, will now produce ſuch a depletion of the circulating ſyſtem, as to endanger immediate ſuffocation from effuſion into the bronchiæ, or cavity of the thorax; which often happens, when it was ſuppoſed the patient had obtained relief by the ſtricture being no longer felt. At this period of the diſeaſe æther is often beneficial; but there ought to be a manifeſt change in the ſtate of the diſeaſe, before opiates, and thoſe medicines vulgarly ſtyled expectorants, can be admitted.

In this diſeaſe, as well as in all others where inflammation is ſaid to terminate by *reſolution*, there is a period that ſeems to ſet all the powers of our art at defiance. This is that condition of body which exiſts between increaſed excitement and the debility that follows. If you bleed after the debility commences, you make it worſe; effuſion and hydro-thorax enſue; and if you ſtimulate before the inflammation ſubſides, you may induce ſuppuration. This is therefore the critical moment with inflammatory affections, and ought to call forth all the attention and vigilance of the medical profeſſion.

In the treatment of opthalmia, I can be very brief. This complaint, often trifling at firſt, is frequently aggravated by different collyria. Metallic ſalts, in ſolution, are common applications to inflamed eyes, and, to a certainty, make them worſe, if employed when the veſſels are turgid, and the pain acute. I know nothing equal to very

cold water, which has been my chief remedy for many years. The patient ought to be kept in a cool, dark place; and bleeding, local or general, purging, low diet, &c. attended to at the ſame time. In the ſucceeding ſtage, when the redneſs of the eye is rather the effect of debility and relaxation in the veſſels of the *tunica adnata*, and ſpecks appear from effuſions into the coats of the eye, the common collyria may be employed with advantage. Plunging the face often into a baſon of cold water, and cold lavation of the head and face, when the headach is ſevere, are excellent remedies.

This diſeaſe has often appeared in the ſhips of the fleet, when other inflammatory affections were common; to variable weather it has been chiefly attributed. A deſcription of opthalmia, as it appeared on the coaſt of Egypt, is given in the communication of Mr. Briggs, ſurgeon of the Ajax. The diſeaſe was extremely afflicting to the army on ſhore; but from its being met with at ſea, a great diſtance from land, in the men of war, would ſeem to oppoſe ſome opinions that have been generally entertained of its cauſes.

MEDICINA NAUTICA.

PHTHISIS.

THIS diſeaſe has not hitherto been numbered among the maladies incident to Seamen, and a ſea-life; but its frequent occurrence ſince April 1800, renders it a ſubject worthy of inveſtigation. Some hundreds of caſes of phthiſis have appeared in the Channel fleet; many have attained the laſt ſtage, and terminated fatally; others have been invalided, and ſent home, while a larger proportion, in the incipient ſtage of the ſame diſeaſe, have been ſucceſsfully treated on board.

A ſea-life has often been conſidered as a preſervative againſt pulmonary conſumption, and a voyage in a ſhip frequently recommended as a cure for the complaint. Caſes have alſo been publiſhed of late, where the air in the lower parts of a ſhip was found of great benefit to phthiſical patients. The hectic fever, urgent cough, and purulent expectoration, having all declined while breathing this atmoſphere, ſuppoſed to be ſalutary, by being leſs oxygenated than the common air. We have

alſo on a former occaſion remarked, that phthiſis was rarely met with in King's ſhips, in which opinion we were juſtified by long and extenſive experience. Something new and peculiar is now to be ſought after in the inveſtigation of the malady as it has lately appeared.

It is therefore of ſome importance, to examine the probable cauſes of this phthiſical diſpoſition among ſeamen, and in what reſpect it has been influence by

Climate and ſeaſon;
Peculiarity of conſtitution;
Unuſual exertions of duty, &c.

The preceding winter was not uncommonly ſevere as to cold, nor remarkable for fogs or rain. The ſhips were kept at ſea the greater part of it, under the command of Sir Alan Gardner, who generally had his ſhare of employment in the winter months. From February till near ſummer, a diſpoſition to fevers of the typhoid type was more common than uſually obſerved in Channel ſtations. In many inſtances theſe fevers could be diſtinctly, and without ſhadow of doubt, traced to imported infection: but in others, it plainly originated in the ſhip, and could not be imputed to cauſes which, at other times, as conſtantly produce typhus, ſuch as perſonal filth, impure air, &c.

Throughout the whole ſummer months catarrh and pneumonia were frequent. The latter, in many inſtances, was fatal; and where recovery took place, obſtinate coughs were often the conſequence. But the ſurgeons did not in general remark, nor did I ſuſpect, from the multitude of phthiſical caſes which I inſpected, that they were a ſequel of peripneumony. A large proportion of theſe caſes were found in men advanced in life, or beyond what is called the phthiſical period. Indeed the

the old ſeamen of the fleet, fifty-four and upwards, were more than uſual, at this time, found to be objects for the ſick-liſt; and their complaints chiefly of the pectoral kind. They firſt felt the effects of ſevere duty.

The months of July and Auguſt were remarkable for exceſſive heat, and long dryneſs of the weather: yet even when the temperature was equal to Weſt India heat, phthiſical affections were numerous; ſuch a ſeaſon indeed ought to have been reckoned favourable to theſe habits of body.

The uſual peculiarities of conſtitution, which indicate a prediſpoſition to phthiſis were obſervable in moſt caſes: perſons with narrow conformation of the cheſt, high ſhoulders, long neck, ſmooth ſkin, &c. and in ſome the external marks of ſcrophula *. I alſo learned from many of the patients themſelves, that they had loſt relations in a ſimilar diſeaſe, although among ſeamen ſuch accounts are to be received with caution. If they found their own narrative apt to influence our opinions about the obſtinacy, or incurableneſs of the complaint, they would not fail to coin hiſtories that might facilitate their diſcharge from the ſervice. On this very account the diſeaſe was often aſſumed by way of deception; for in ſome miſguided hour, the Admiralty had granted to the hoſpitals the power of invaliding conſumptive patients, by private ſurvey, without any appeal to officers of ſhips. This practice became ſo glaringly improper, that

* This article has loſt much value, from my not being able to peruſe Dr. Hufeland's Treatiſe on Scrophula before it was finiſhed. My friend, Mr. John Bell, had nearly completed for the preſs, a tranſlation of that work, when the Pelican was drove on ſhore by a gale of wind at Jerſey, by which accident his MS. was deſtroyed. He has not yet been able to turn his attention again to this ſubject.

facts were produced by almoſt every ſurgeon, that many of their beſt men had been diſcharged by that form of ſurvey, who were found in perfect health a few days afterwards among the public houſes. Theſe facts were communicated to Admiral Cornwallis, at the time that five able bodied men belonging to the Edgar, as repreſented by Mr. Hill, had been invalided againſt his opinion, and only a few days before a general ſurvey. The Board under Earl St. Vincent put a ſpeedy ſtop to this kind of invaliding, ſo contrary to the ſpirit of ſervice.

We therefore admit, that the prediſpoſition to phthiſis was apparent, or to be ſuſpected, in all inſtances of this prevailing malady in the fleet, and was called into action by other cauſes, rather than by a peculiar condition of the ſeaſons or weather.

The ſtation of the fleet in blockading the port of Breſt, if it unfolded new forms of ſervice, new diſeaſes have alſo been the conſequence. The cruizes have generally been uncommonly long, with a reſtleſs mode of duty, and the time for remaining in port to refit, not only limited to a few days, but all hands employed in the moſt ſevere labour, with ſhort ſleep, and reſpite at night. Such exertions tend to wear out human life; and diſeaſes of exhauſted power muſt be the natural and inevitable effect. If it is true, as ſome phyſicians have aſſerted, that phthiſis only occurs in ſcrophulous habits, we cannot doubt but the cauſes juſt mentioned are capable of exciting it. Hard labour and inceſſant fatigue, are the means of expoſing the body to unequal and different temperatures; ſometimes over-heated in the hold, or between decks, and when overflowing with ſweat, chilled at a port by a current of air partially applied, and often wet

on

on a deck, after being warmed below. Under theſe circumſtances the lungs ſoon ſympathize with the ſurface of the body; coughs, ſtitches, ſtrictures acroſs the breaſt, dyſpnœa, hymoptyſis, and ulceration quickly follow, in perſons with conſtitutions thus diſpoſed.

In the milder climate of the Mediterranean, and the ſtill warmer temperature of the Weſt Indies, long cruizes, and ſevere labour while in port, have not been productive of pulmonary diſeaſes. In the Channel, the duty hitherto had been conducted in a very different manner, and the cauſes which we have aſſigned were unknown. But as pectoral diſeaſes of all kinds have, at this period been particularly prevalent, we ſearch in vain for other reaſons for their appearance.

A new form was alſo introduced into ſea-diet at this time in the Channel, concerning which I was not conſulted, and it never received my approbation, nor ever can. An ounce of lemon juice, with an equal quantity of ſugar, diluted with water, was daily ſerved as a preventive for ſcurvy. An acid uſed in this manner for many months together, could not fail to injure the digeſtive functions, and accelerate the emaciation and debility of phthiſis. We are of opinion with thoſe who confine the diſeaſe to a ſcrophulous affection of the lungs: Hufeland, I believe, has lately contended, that a ſuperabundant acid exiſts in ſcrophula; and if this is true, the lemonade was adding to that diſpoſition, as the meſenteric glands muſt have ſoon felt its effects, and become torpid from abſtraction of ſtimulus. For theſe reaſons, we have always preferred the eſculent vegetables in preventing ſcurvy. But it is well known, that ſcrophulous conſtitutions are incapable of bearing much hard work; they are generally ſlender in make and

and their muſcular fibres ſoft and weak, for which reaſons they are the firſt to ſink under unuſual fatigue.

What is rather ſingular in the hiſtory of this diſeaſe, as it has appeared in the Channel ſhips is, that we have not in any inſtance obſerved it in the form of what is called the *florid conſumption*. The complexion has been rather ſwarthy and pallid; nor has the concomitant hectic fever exhibited the *rubor generum*, that high fluſh of the cheek ſo generally remarked in the confirmed phthiſis of other ſituations.

Dr. Darwin in Zoonomia, in his firſt claſs of diſeaſes, order ii. genus 1ſt. ſpecies 9th. mentions *Hæmoptoe Venoſa*: "Venous Hæmoptoe frequently attends the beginning of the hæreditary conſumption of dark-eyed people, and in others whoſe lungs have too little irritability. Theſe ſpittings of blood are generally in very ſmall quantity, as a tea-ſpoonful; and return at firſt periodically, as about once a month, and are leſs dangerous in the female than in the male ſex; as in the former, they are often relieved by the natural periods of the menſes. Many of theſe patients are often attacked with this pulmonary hæmorrhage in their firſt ſleep; becauſe in feeble people, the power of volition is neceſſary, beſides irritation, to carry on reſpiration perfectly: but as volition is ſuſpended during ſleep, a part of the blood is delayed in the veſſels of the lungs; and, in conſequence effuſed, and the patient awakes from the diſagreeable ſenſation." Vol. ii. p. 70. 4to. edition.

This deſcription from Dr. Darwin, would ſeem to throw conſiderable light on the diſeaſe in queſtion, as all the cauſes which we have aſſigned might induce

induce *inirritability* of the lungs, as well as of other parts of the body. The mode of cure that was found moſt ſucceſsful, would alſo ſeem to juſtify this kind of reaſoning; for opiates, æther, and other ſtimulant medicines, with the moſt nutritive diet that could be procured, had the beſt effects; while bleeding, and other means of depletion when employed, as certainly did harm.

The beginning and progreſs of this epidemic, for ſuch we profeſs it to have been, but too often excited little ſuſpicion. It generally commenced with ſlight rigours, followed by heat not much greater than natural, a tickling cough, difficulty of breathing, eaſily hurried by even gentle exerciſe or labour; debility, little expectoration, but ſometimes ſtreaked with blood brought up by coughing; heat in the fauces and trachea, frequently followed by blood brought up from the lungs, by hawking rather than by cough, and relieving dyſpnœa and ſtricture of the breaſt for a conſiderable time; the patient, at the ſame time, expreſſing his feelings as if he had received unexpected eaſe. The pulſe from the firſt, was frequent and weak; the voice in ſome, ſo altered and low, as ſcarcely to be heard, and ſtridulous; in others hollow, as if coming from a cave. The appetite for food of any kind quickly flagged, the muſcular ſtrength failed, with averſion to all motion. Though without pain, the hopeful ſtate of mind, and flow of ſpirits, that are often obſerved, even in the laſt ſtage of pulmonary conſumption, were unknown here: apprehenſion about their fate, and depreſſion of mental faculties, were rather common. The bulk of the fleſhy parts ſoon ſhrunk, and emaciation ſhowed itſelf early.

The meridian and evening exacerbations of hectic fever, were not ſo diſtinctly perceived, as have been

been remarked in other conditions of life: in ſome it was fatal, without ſhewing much tendency to the hectic paroxyſm; nor did we often obſerve the alternations of ſweating, with the colliquative diarrhœa, ſo frequent in the laſt ſtage of phthyſis.

In many inſtances the diſeaſe was rapid in its progreſs, and fatal in five or ſix weeks from its firſt appearance. A number of deaths happened at ſea from the length of the cruizes; the complaint being advanced before known to the ſurgeon. But the affliction was much increaſed as the caſes accumulated in the ſick-berth; for there was now no hoſpital-ſhip to carry them to port, where change of ſcene, amuſement of mind, more ſpacious apartments, &c. might have contributed to recovery.

If we have been correct in tracing the cauſes of this prevailing phthiſis in the Channel, to the exhauſting effects of hard duty, and ſevere labour, both at ſea and in port, we are not to be ſurprized at the almoſt incurable nature of the diſeaſe, and the ſmall relief that could be obtained from the exhibition of any article in medicine. The moſt early ſymptoms indicated an exhauſted excitability; a debility induced by long continued and exceſſive exertions. In ſuch a condition of body, what does a ſhip afford? The diet that was here of the firſt importance, was deficient in almoſt every article that is required to ſtimulate and reſtore the functions of depreſſed ſenſorial power. The ſurgeon's neceſſaries contain ſago, rice, ſugar, chocolate, and tea, that has lately been ſupplied, of ſo coarſe a quality, as to be unfit for a delicate appetite; theſe, with portable broth, are the diet of a ſick-berth in common ſhips. When I have examined the emaciated tenants of theſe quarters, in different

veſſels of the line, as they arrived in Cawſand Bay, often after twelve, ſixteen, and even eighteen weeks abſence from harbour, it has been matter of ſerious regret to me, that ſo many of my numerous applications on this ſubject ſhould have met with no return *. I know not of what uſe medical eſtabliſhments are among us, if in the practice of the art we are to be deprived of its moſt eſſential reſources. Am I to look to the contents of a medicine cheſt for food and nouriſhment to my patients, famiſhed for want of ſomething that is grateful to the appetite, and capable of repairing their ſcanty juices. Yet during the prevalence of this unconquerable diſeaſe, moſt of our ſhips had on board large ſupplies of peruvian bark, from fifty to one hundred pounds, and upwards. This medicine probably coſt twelve ſhillings per pound: but for what conditions of expected ſickneſs it was thus gratuitouſly ſupplied, I can form no idea: no intelligent ſurgeon in Channel ſtations could ever diſpoſe of the quantity; it muſt mould and ſpoil in their ſtore-rooms. How much better would a ſhare of this expence have been employed in ſome delicious article of food? This reminds me of the former condition of our hoſpitals, where you might preſcribe twenty guineas *per diem* in James's Powder, without being allowed a ſingle cup of tea for your patient.

The treatment of pulmonary conſumption, till lately, turned very much, if not entirely, on the ſuppoſition of its being of an inflammatory nature;

* It was not till the ſummer of 1801, that live ſtock was ſent to the fleet at ſea.—When the hoſpital ſhip attended, I had it in my power to diſtribute ſheep, porter, cyder, wine, fruit, eggs, vegetables, &c. when wanted.

not

not only from the beginning, but too often till the very laſt ſtage of emaciation and debility. The expectoration of purulent matter, which indicated an ulcerated ſurface of the lungs; the appearance of the lungs on diſſection, and the hectic fever which attends confirmed phthiſis, with the florid colour, and buffy coat of the blood when drawn, gave the full ſanction to large evacuations of the vital fluid, and alſo to the unlimited uſe of milk and vegetables which compoſed the low diet of our predeceſſors. In no diſeaſe beſides, was the ſteady and permanent employment of bleeding and weakening food ſo obſtinately perſiſted in; and no morbid condition of human life ever exhibited ſuch cruel examples of the inconſiſtency of medical theories. In ſome inſtances of my own attendance of conſumptive patients, when very young in the profeſſion, I have purpoſely avoided my uſual viſits, to ſhun the repetition of venæſection, though directed by the authority of a phyſician; as it appeared to me almoſt criminal to draw blood from a ſubject that was waſted to ſkin and bone, and faſt approaching to the laſt ſtage of debility. Indeed the early part of my medical education was obtained in a market-town, to the neighbourhood of which a number of phthiſical people annually reſorted in the ſummer months, for the benefit of goat-whey, a favourite beverage in the old practice for this mortal complaint. This annual groupe of afflicted viſitors, was compoſed of all ages, ſexes, and conditions. Some in the incipient ſtage, that were able to ride abroad, and enjoy the ſalubrious air of Cheviot hills, and the Northumbrian mountains; others verging to decline, ſinking under profuſe ſweats and diarrhœa. Many of theſe ſeemed to have been diſpatched from home, as much for the purpoſe

poſe of relieving the *ennui* of medical admonition in a tedious illneſs, as for the trial or expectation of recovery. In ſuch caſes, the phyſician as well as apothecary becomes wearied by the ſame round of queſtions daily: their routine of practice is in a manner exhauſted or worn out; and the helpleſs patients are ſometimes ordered to try a change of air, to give reſpite to the barren repetition of medical conſultations. For theſe or ſimilar reaſons, we have often ſeen the dying conſumptive, in the worſt ſtage, cruelly ſent abroad, to end his days in a foreign land, inſtead of being permitted to breathe his laſt in the arms of relation and friendſhip.

The patients that reſorted to our neighbourhood had been all repeatedly bled; with the view, as ſuppoſed, of ſubduing the inflammatory diatheſis, and the early formation of tubercles. Yet, however generally this practice has been adopted, it reſts on very ſlender foundation; for debility is among the moſt early and prominent features of phthiſis. A very quick pulſe attends the firſt ſymptoms, and more eaſily accelerated than in almoſt any other complaint. All conſumptive habits have a peculiar delicacy and ſoftneſs of ſkin, and alſo of muſcular fibre, which ſtrongly indicate conſtitutional weakneſs. In ſuch conditions of body we cannot ſee the ſigns of increaſed excitement and vigour, which point out venæ-ſection. We rather ſuppoſe that bleeding, even in the firſt ſtage, has had a great ſhare in inducing that debility which we wiſh to avoid as the certain conſequence of the diſeaſe, and thereby haſtening death. Bleeding, therefore, on the firſt ſuſpicion of a phthiſical tendency, appears to have been generally practiſed, with a view to overcome ſome inflam-

matory

matory affection of the lungs or thorax, of which there are no ſufficient proofs.

Analogous to the ſubtraction of the vital fluid, is the dietetic regimen of milk and vegetable food. Theſe alſo have been directed to reduce the habit, and lower the inflammatory tendency. However much I am inclined to venerate the authority that defends this ſpecies of diet in phthiſis, I muſt confeſs, that my own obſervations have, on all occaſions, deduced unſpeakable miſchief from its indiſcriminate application. How often have I ſeen the unfortunate patient ſinking under goat-whey and vegetable food, amidſt all the tortures of a colliquative diarrhœa, depriving the body of its nouriſhment, with a rapidity not to be equalled! But the dyſpeptic affections which are apt to follow the uſe of vegetables in female conſtitutions particularly, oppoſe powerful arguments to this kind of diet; and in many caſes it cannot be taken in any form or quantity.

If the diet of milk and vegetables is attended with ſo many inconveniencies, it may be aſked, what then is the moſt proper food for phthiſical patients? It is difficult to lay down general rules, on a ſubject that muſt be varied to different conſtitutions. The impropriety of animal food, and ſtimulating nouriſhment have been contended for, from their heating quality, exciting fever, increaſing the circulation, and thereby encouraging the profuſe perſpirations. It would appear, however, that this effect has rather been marked in the laſt ſtage of the diſeaſe, when the emaciation and debility were conſiderable, and when the exhibition of all kinds of ſtimuli requires the utmoſt caution. We ſee this ſtrongly exemplified in the quick, and almoſt inſtant flush of the cheek, which

which ſoon ſpreads over the face, and is often followed with drowſineſs and ſleep, after eating or drinking any thing warm, even a cup of tea, a ſmall glaſs of wine and water, or ſmall-beer. The breathing alſo, at the ſame time, becomes quick and laborious, and the voice fails ſo as hardly to be underſtood; no doubt theſe effects proceed from the narrowed capacity of the lungs to receive the increaſed quantity of blood, that is thrown into the pulmonary artery by the more active circulation. In proportion, therefore, to this inordinate excitement, unuſual languor, and inaptitude to motion ſucceed; but frequently alſo the expuition of pure blood.

This ſuſceptibility to ſtimulus in the ſanguiferous ſyſtem, would imply an *increaſe* of irritability in the arteries, while the lymphatic ſyſtem is rendered unuſually *torpid*. But it is in the florid conſumption more particularly to be obſerved, than in the phthiſis of which we have given the hiſtory, that ſuch a character obtains. Hence the cure would ſeem to turn very much on diminiſhing the irritability of the circulation, and increaſing that of abſorption in the reſpective veſſels. To ſuit the degree of ſtimulus, whether of diet or medicine, to the ſuſceptibility of action, would therefore appear to be the golden rule in the treatment of this fatal diſeaſe.

When the hectic fever becomes exquiſitely formed, when all its characteriſtic circumſtances appear regular and uniform, with great debility and emaciation, I think with Dr. Cullen there can be no recovery. In this ſtage of the diſeaſe, as medicine is exhibited in vain, ſo no kind of regimen in diet can be made perfect. The period is now paſt, and the opportunity loſt, when nouriſhing food might have ſuſtained the patient; and

warded off that weakneſs which was to be expected in the courſe of the diſeaſe. If we are at all right in what we have expreſſed of conſtitutional peculiarities in thoſe who are ſubject to phthiſis, we would ſtrongly recommend a more nutritive regimen in the early ſtage of the affection; for it appears to our obſervation, that ſuch habits of body are not capable of bearing large evacuations, ſpare diet, or any labour that induces exceſſive fatigue.

If, however, we conſider phthiſis as a ſcrophula of the lungs, we do not mean to infer from this, that all families are ſcrophulous when conſumption has appeared in one perſon. This habit may be acquired by certain debilitating powers; and particularly by damp ill-aired lodgings, want of cleanlineſs, and poor diet. I alſo think, that this acquired ſcrophula may become ſo conſtitutionally fixed and obſtinate, that a diſpoſition to the diſeaſe may deſcend to the offspring of ſuch people. The preſent times of ſcarcity will probably operate widely in increaſing this kind of ſcrophula, as well as other complaints that originate from penurious nouriſhment. A ſmall portion of bread and potatoes, with the moſt watery vegetables, and no animal matter, have been the chief food of a large part of the lower orders of people in the united kingdoms for twenty months paſt. May the preſent proſpects of a plentiful harveſt be ſpeedily realized *!

But the diſpoſition of ſcrophulous ulcers, when expoſed, as on the ſurface of the body, in the glands of the groin, axilla, or thoſe under the lower jaw, is exactly analagous to the ulcerated ſurface of the lungs in phthiſis. Theſe glands, when

* Summer 1801.

they

they firſt ſwell, give little pain, ſcarcely aſſume increaſed action, are indolent and long in ſuppurating. Their appearance, indeed, after their bulk has enlarged, and mechanically diſtended, or ſeparated, the common integuments can hardly be called ſuppuration. The matter that flows from the expoſed ſurface of the wound, is rather ſecreted from the ſurrounding parts, little or none of it comes from the body of the lymphatic gland itſelf; it continues hard and torpid. On the whole, ſcrophulous ſores have a diſtinct character, and exhibit a condition of body that cannot be conſtrued into inflammatory diatheſis; for neither a rigid fibre, ſtrong, hard, full pulſe, with what is called denſe blood, are found to be preſent.

The ſmooth, ſoft, and ſhining ſkin, ſparkling eyes, with large pupils, and florid cheeks, have too often led medical people, as well as common obſervers, to conſider thoſe external ſigns as ſo many teſts of health and vigour of conſtitution. This idea has been ſo ſtrongly fixed, that even the deceitful fluſh of the cheek, during the exacerbation of the hectic paroxyſm in the laſt ſtage, has been conſtrued into a ſymptom of fullneſs; and, horrible to relate, led to the murderous repetition of phlebotomy.

The indolent diſpoſition of lymphatic glands, ſhown by their tardy progreſs towards ſuppuration, and the obſtinacy of cure in the ulcerated ſtate, receive at once a better explanation, by conſidering both in a condition of deficient excitement. The ſcrophulous tumor and ulcer are moſt eaſily diſcuſſed and healed in the warm ſummer months, and apt to recur again in a cold ſeaſon. I have alſo ſeen them gradually ſubſide among ſailors, as the ſhip, in a voyage to the Weſt Indies, approached the tropical latitudes; continue well in

a ſultry climate, and afterwards return, on the paſſage to England. In the ſame manner the phthiſical patient obtains alleviation of his complaint in hot ſummer weather that is fine and equal; and the moſt certain prevention of the diſeaſe, is a journey to a warm climate, that has no winter; and to continue there till forty-five years of age. The conſtant high degree of temperature within the tropics, free from thoſe ſudden viciſſitudes peculiar to our iſland, preſerve the body in a ſteady and permanent degree of excitement; and thus the heat of the atmoſphere appears of all ſtimuli to be the moſt congenial and ſalutary to the ſcrophulous habit.

Scrophula itſelf, by the ableſt writers, has been juſtly conſidered a diſeaſe of the lymphatic ſyſtem, and particularly the glandular parts of it. The affection itſelf, moſt probably conſiſts in the *torpor and inirritability* of theſe glands. Indeed the whole abſorbent ſyſtem, although endowed with muſcular power, is not prone to exceſſive action, or very ſuſceptible of ſtimuli. We even obſerve that poiſons which are capable of deſtroying life, are taken up and tranſmitted to the blood by abſorbent veſſels. The moſt deleterious of all contagious matters are often carried along the lymphatic veſſels without the intervention of a bubo; and produce general diſeaſe throughout the body, with but a trifling feeling in performing their office. The venereal virus of a chancre does not always excite tumor in the groin during its abſorption; as we frequently find ulcerated tonſils and confirmed lues without that previous ſymptom. The variolous matter, indeed, excites a tranſitory pain and ſwelling in the axilla after inoculation; but theſe glands very ſeldom ſuppurate from that cauſe. In my own practice I have not ſeen above two

caſes.

caſes of axillary bubo from inoculation. Theſe facts tend to ſhow, that the abſorbent ſyſtem, even in its healthy natural ſtate, is not remarkably irritable; but that in ſcrophula, even this irritability is ſtill more impaired, as appears from the indolent tumified gland, and ulcerated ſurface. If, therefore, there is any analogy between the ſcrophulous ſore on the external parts of the body, and the ulcer of the lungs in phthiſis, it will, in ſome meaſure, explain the incurable nature of the diſeaſe.

But to return to phthiſis, as it has lately appeared in the Channel: In laying down rules of practice, a variety of circumſtances are to be taken into account, that are not uſually met with in the treatment of conſumption in other ſituations of life.

In the inveſtigation of this complaint, it will eaſily be perceived by the medical reader, that we ſcrutinize cauſes chiefly with a view to preventive practice. This can never be accompliſhed without the knowledge of what has, or can injure health. The phyſician who attends to the operations of a fleet, muſt often view occurrences that relate to diſeaſe in a light very different from an officer. The facility and rapidity with which a manœuvre, or point of duty can be executed, may pleaſe the one, but cannot always delight the other. Hence the value of a ſyſtem of prevention. When new diſeaſes appear new cauſes are to be ſuſpected; and it is our province to find them out, and hold them up to view.

That there is ſome certainty in our reaſoning on the production of this conſumption from ſevere duty at ſea, and little relaxation while in port, is evident from its being already little known, while I am writing (Summer 1801). The ſhips are

now ſerved with live-ſtock at ſea, and a large allowance of freſh vegetables; fewer ſignals are made for the purpoſe of parade or manœuvre; and four days are added to the ſix, which make ten, for refitting in port.

That new cauſes were to be aſſigned, we judged from the rare occurrence of the complaint among ſeamen, a ſea-life having been hitherto accounted a ſafeguard againſt it; and a voyage recommended and found ſalutary.

But at the ſame time we think it fair to acknowledge, that theſe cauſes, in producing pulmonary conſumption, almoſt apply to perſons of conſtitutions prediſpoſed to the affection, and perhaps confined to ſcrophulous habits.

The firſt attempts towards the cure of our phthiſis were therefore a removal of the remote cauſes; or, to ſpeak more correctly, to remove the patient from their action; which was to take the ſeaman into the ſick-liſt, and to indulge him with all the comforts that could be procured.

The great advantage of exemption from duty, is the full enjoyment of all the reſtorative effects of ſleep. Such a tranſition from the conſtant labour of trimming ſails, getting wet with rain at one time, at another warmed to ſweating, and then ſuddenly chilled; I ſay to be ſecured againſt all theſe cauſes of this diſeaſe, is more than half the cure. To any human being, who has been debilitated by exceſſive and long fatigue, and expoſed a great part of the night to inclement weather, how acceptable muſt a whole night's ſleep be! how refreſhing! and what grateful ſenſations muſt the morning afford! This has indeed been amply proved in the different ſick-berths of the fleet; for more than half the caſes of all admitted into the ſick liſt, have been affections of the breaſt; which

which are generally more relieved by reſt, and a few nights of comfortable repoſe, than any other complaint.

The beſt cures which I have witneſſed during this prevailing malady, appeared to have been more owing to regimen than medicine. Theſe happened in ſhips that had greater advantages of diet than others; and where the patient had not been weakened in the early ſtage by bleeding, under the idea of relieving ſtricture of the breaſt, as a ſuppoſed attendant of pneumonia.

A multitude of caſes have however been preſented to me at different times, under the appellation of phthiſis, that I believe had no diſpoſition towards it. Uncommon recoveries have therefore been ſaid to take place, as the effects of particular articles of medicine and ſuperior treatment. All accounts of this kind are to be truſted with ſome qualification. Miraculous cures, even in the ſtage of purulency, have been talked of; but at the ſame time ſo vaguely detailed, and with ſuch total neglect of the operation of other powers on the body, that little credit is to be given to their hiſtories. What is called purulency in the complaints of the breaſt, is too often a miſ-applied term: and phyſicians who go by certain rules to diſtinguiſh *pus* from mucus, have more faith in the experiments which have been made on this ſubject, than I am diſpoſed to give them. Pus expectorated from the ulcerated ſurface of the bronchiæ, muſt be blended with ſo much mucus from the ſurrounding parts, in the effort of coughing it up, that it can almoſt never be expectorated pure. Much alſo muſt depend on the time it has been expoſed to the action of the air in the lungs after it was ſecreted, by which the more fluid parts muſt have evaporated, or been abſorbed

ſorbed; and from which both colour and conſiſtence become altered. Can any perſon deny that theſe changes may not give different reſults to experiments of this ſort: the miſtakes that are committed every day, ſhow the uncertainty of the concluſions deduced from them. We ought therefore to be very cautious in forming judgement on the appearance of expectorated matter, unleſs we want to impoſe on the credulity of our patients, by making them believe that we cure a galloping conſumption, when we have only relieved an obſtinate catarrh.

The word *hectic* has alſo been often very improperly employed in ſpeaking of pectoral complaints. With ſome medical people every febrile feeling is magnified into a genuine hectic paroxyſm; and a ſimple cold is all at once dreſſed out with the pompous trappings of technical phraſeology. Some of our "caſe-coining" doctors, in furbiſhing up their ephemeral productions, have lately given wide ſcope to the uſe of theſe terms.

The treatment of hectic fever, in no ſyſtem of medicine that I am acquainted with, has yet received thoſe inſtructions for regulating the practices that are laid down in all other ſpecies of fever. As a ſympathetic affection, and aſſociated with ſome primary diſeaſe, its prevention and cure muſt be conducted on the principles which overcome the original complaint. Yet the hiſtory of hectic fever itſelf is curious and intereſting. In ſome caſes of phthiſis I have ſeen the cold ſtage ſo long and ſevere, as to aſſume more the appearance of a vernal intermittent, or what might be called a double quotidian, than the common form of hectic, as a concomitant of purulency. In one caſe I directed opium and cinchona ſome hours

hours before the acceſſion: at firſt this plan ſeemed to promiſe advantage; but a few days' trial convinced me of its inefficacy; there was a ſtrong hereditary diſpoſition to ſcrophula in the patient's habit.

The alternations of the hectic paroxyſms with the colliquative diarrhœa are ſingular phœnomena in the animal economy. If Dr. Darwin's claſſification of diſeaſes is correct, volition and irritation would ſeem to be the two faculties of the ſenſorial power, that are eſpecially impaired in phthiſis; ſenſative and aſſociated motions are increaſed in proportion. Increaſed ſenſation is ſtrongly apparent from the fortitude of mind with which they ſupport affliction; and the lively hope of recovery, often retained to the laſt moment. I have been frequently aſked, a few hours before death, by my patients, in how many days I thought they would be able to perform a journey. It has been my lot to attend ſome young ladies in this diſeaſe, both married and unmarried, poſſeſſing the moſt elegant accompliſhments of mind, and in form and beauty beyond all the powers of deſcription. There are few phyſicians but muſt have felt the painful taſk of profeſſional attendance in ſuch melancholy caſes;

"Condemned like me to hear the faint reply;
To mark the fading cheek, the ſinking eye;
From the chill'd brow, to wipe the damps of death,
And watch in dumb deſpair the ſhort'ning breath *."

* Et hæc generis humani ſtrages immanis in juvenes præcipue cadit, ſæpe in formoſiſſimos, præcipue ſequioris ſexus, et in eos qui ingenio, et animi et corporis elegantia, præſtant. Pauci ſunt quibus, cognati, familiares aut amici, hac peſte abrepti, non ſunt lugendi. Miſera hæc tabes, ſæva, atrox et inſenſibilis, teneros et amabiles depaſcens, cæde et luctu patriam implet.—*Gregory. De morb. cæli, mut. med.*

Increaſed

Increaſed aſſociation is exemplified, whether we conſider the hectic fever merely as the effect of ſympathy, or the conſequence of abſorbed purulent aërated matter. Nothing can be more ſtrongly marked than the alternations of this paroxyſm with diarrhœa, as the one ſubſides, the other appears, and *vice verſa*. In all this ſtage it is ſurpriſing, that the ulcerated ſtate of the lungs ſhould give ſo little pain. A malady that ſometimes continues for twenty years, and proves fatal at laſt, would ſurpaſs all human afflictions, were it either remarkable for acute pain, or the dread of diſſolution.

In the treament of hectic fever therefore, as far as our preſent knowledge goes, little can be done; the body ought, if poſſible, to be preſerved in a warm and equal temperature, very much with the view of preventing the ſuppreſſion of the cutaneous diſcharge, which is ſo apt to fall on the bowels, and produce diarrhœa. The diarrhœa itſelf is a more painful ſymptom, more quickly reduces the health of the patient; and as the condition of the original diſeaſe at this period, can afford very ſlender hopes of recovery, the medical attendant can only alleviate what he cannot cure, by preſcribing thoſe means which determine the hectic paroxyſm to the ſurface of the body. Warmth in bed, warm diluting drinks, with a ſmall portion of wine; glyſters with opium, warm bath, pediluvium, opium with miſt. cretæ, aromatics and æther, &c. are chiefly to be depended upon *.

* Dr. Cullen uſed to relate the caſe of a gentleman of Philadelphia in phthiſis, who paſſed his winters in the Weſt Indies, by way of relief. But happening one ſeaſon to miſs his paſſage, he fell upon the expedient of keeping within doors, in a room heated to the temperature of Jamaica, and found ſimilar relief, till the ſummer returned.

A claſs

A claſs of medicines, named *Expectorants*, have been long employed in the treatment of this diſeaſe, and all affections of the breaſt. No term, however, in our language ſeems to have been more miſapplied than this, nor have the effects of any article in the *Materia Medica* been leſs underſtood. Expectoration is that diſcharge of mucus from certain glands, or exhalents, on the ſurface of the bronchiæ, which is occaſionally brought up by hawking or coughing. By remaining in the air-cells for ſome time, it becomes thick and opaque, from the abſorption of its fluid parts, as happens in ſleeping. Expectorant medicines have therefore been conſidered, as promoting the ſecretion and excretion of this ſubſtance, from the idea of evacuating the pulmonary veſicles, and relieving the lungs. If the air-cells are unuſually clogged with mucus, pus, or ſerum, a difficulty of breathing, and anxiety follow, with an effort to diſcharge the offending matter, that the lungs may be duly expanded; to aſſiſt in this office expectorants are indicated. But the circuitous courſe which theſe medicines are to make through the ſtomach and circulation, to arrive at the lungs, and there to exert a ſpecific power, renders their utility extremely ſuſpicious. They conſiſt chiefly of gum-reſinous matter, mucilaginous, and oleous. If the firſt are uſeful, they muſt act by exciting the ſtomach, and, by conſent of parts, the lungs afterwards. The mucilaginous and oleous expectorants can only act mechanically, by defending the fauces when excoriated, or over-ſenſible by inflammation, and thus by ſympathy, relieving the irritation of the pulmonary ſurface.

Pains of the breaſt, ſometimes acute, and at other times obtuſe, with what are called ſtrictures acroſs the cheſt, are frequent attendants of phthiſis.

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The intercoſtal muſcles are often too ſenſible to be preſſed, and a deep inſpiration produces exquiſite pain. In this ſituation, reſpiration is more like panting than breathing, and the action of the lungs appears ſo laborious and oppreſſed, that the patient would ſeem in the agonies of death. Throwing cold water on the face, will ſometimes terminate this paroxyſm, as it does a fainting fit. Bliſtering the part is a common remedy; but before a bliſter has time to riſe, much pain muſt be endured, and relief ſeldom comes with it. Frictions, ſinapiſms, and dry cupping, as it is called, are all uſeful. Æther rubbed on the ſpot will often give immediate eaſe; inhaling æther, and even ſwallowing it, afford relief; but opium ſeems rather to add to the anxiety, by quickening the circulation through the lungs.

The ſtimulant powers of opium, apparent from the quickened and fuller pulſe, flush of the countenance, &c. much reſemble the effect of vinous ſpirit: the ſtimulus of both is chiefly determined towards the circulating ſyſtem, and ſeems to have rendered their effects very doubtful in florid conſumption. But in the Channel phthiſis much good was obſerved from opiates, particularly where the body was under the influence of digitalis.

Riding on horſeback, the famous remedy of Sydenham, like ſwinging, is ſaid to retard the frequency of the pulſe. The good effects of it are ſtrongly exemplified in the caſe of Dr. Currie, a name dear to human nature, as publiſhed in Zoonomia: but it ſcarcely comes within the range of our preſent inquiry. What I have ſeen of it elſewhere, in a great number of patients, does not enable me to ſpeak of it with any commendation, more than as being a healthy exerciſe, it is favourable to phthiſical debility, promotes muſcular ſtrength,

ſtrength, and a regular circulation, excites appetite, and conduces to ſalutary ſleep.

As chemical and experimental philoſophy have improved in an inquiring age, medicine has acquired freſh reſources, and new paths to inveſtigation have been opened to ingenious minds. Dr. Beddoes having obſerved in pulmonary conſumption of the florid kind, a colour in the blood that indicated a high degree of oxygenation, has propoſed a method of cure, that might ſubtract oxygene from the ſyſtem, by the patient breathing *a lowered* atmoſphere, or one that had a ſmaller proportion of vital air, than that of our common atmoſphere.

Although this opinion was mere *hypotheſis*, yet the practice is juſtified by ſtrong analogies. It is proved from the experiments of Prieſtley, Godwin, and others, that the blood derives its florid colour from oxygenous gas, during its circulation through the lungs. Men employed in particular kinds of trade, are known to be exempted from conſumption; and our opinion has been adduced, that ſeamen are ſcarcely affected with it. The hiſtory given in the preſent article affords the only exception to this general obſervation. If, however, that learned phyſician miſtook the effect for the cauſe of the diſeaſe, it may in ſome meaſure account for the want of ſucceſs in the trials which have been made, from reſpiring a reduced air. But if nature can permit an unuſual quantity of oxygene to be taken into the circulation from the ſurface of the lungs, not only ulcerated, but almoſt deſtroyed, in this inſtance, ſhe does not act with her conſtant rule of preſerving. It might be conjectured with equal propriety, that in florid conſumption, the body has loſt its capacity for giving out oxygene, and circulates it through the blood-

veſſels

veſſels without expenditure, or forming thoſe combinations which it effects in more perfect conditions of health. Thoſe conſtitutions which beſpeak the higheſt diſpoſition to ſcrophula, are moſt florid in the colour of the complexion: perhaps this hyper-oxygenation of their blood, is owing to ſo little of it being expended on the lymphatic ſyſtem, which may produce that *inirritability* of theſe veſſels and glands, which I conceive to be the proximate cauſe of all ſtrumous affections.

Since my correſpondence with Dr. Beddoes on this ſubject ſome years ago, I have paid more attention to it. The atmoſphere in every deck of a ſhip, I believe may be juſtly ſaid to be lowered, not only by a great number of men breathing in a ſmall ſpace, but the moiſture and contents of the hold are a copious ſource of non-reſpirable gaſes. What is called the vapour of *bilge-water*, that ſo quickly tarniſhes paint and metals, is nothing elſe but hydrogenous gas, that is evolved in the hold or well, during the production of carbonic acid gas. The inhabitants of the cockpit and bread-room are always more ſallow than others: among the ſurgeons, I have uniformly remarked the complexion more ſwallow, in proportion to the ſize of his ſhip; for in frigates, and ſmaller veſſels, their cabins are in the gun-room *.

But I am of opinion, that the ſalted diet of ſeamen is alſo a preſervative againſt phthiſis; for marine ſalt, or muriated ſoda, powerfully excites the abſorbent ſyſtem, and thus preſerves the habit from ſcrophula, the pulmonary ulcer being entirely of that kind, and ſeldom curable. This favours

* The ſea-air, nevertheleſs, muſt be accounted ſtill purer than the ſhore.

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the exhibition of ſea-water in glandular ulcers and ſwellings; a practice which, I believe, from being ſo ungrateful and nauſeous, has ſeldom been fairly tried. What ſatisfies me beſt in the cure of ſtruma, is flor. ſulph. combined with cinchona in powder, taken ſo as to keep the bowels ſcarcely lax; to be accompanied with ſtrengthening diet, and perſiſted in for many months.

I do not however think, that Dr. Beddoes's plan has been yet completely reduced to practice. It muſt be attempted on a large ſcale to have the deſired effects; but no private phyſician can afford expence ſufficient for this. The preſent age has long been employing its reſources in the ſlaughter of mankind, and it muſt change its political temperature, before it can think of devoting theſe ſums to ſave the human race from pain and diſeaſe. The preſent miniſter is the ſon of a phyſician, and propoſals for alleviating affliction on the bed of ſickneſs, may, from habits imbibed by the example of ſuch a father as Dr. Addington, incline him to allow ſome triffle out of the Treaſury for this chriſtian purpoſe. "*To whom much is given, much will be required.*"

A medicine of ſtill more efficacy in the cure of phthiſis, has been the ſubject of much praiſe in the journals of the preſent day, the digitalis, or foxglove. If we are to truſt the reports of ſome phyſicians, it may be deemed infallible. All accounts of this kind are, however, to be received with caution. The hiſtory of our epidemic in the Channel has ſufficiently convinced us, that we ought to be very guarded in pronouncing a diſeaſe of the breaſt to be phthiſis, though very nearly allied to it in the general concourſe of ſymptoms. We know that the preſence of purulency is extremely ambiguous in a multitude of caſes, and

the hectic paroxyſm is often ſaid to be confirmed, when the febrile acceſſions were nothing more than what attend an obſtinate catarrh. It is true, that a number of caſes were ſent on ſhore in genuine phthiſis; but along with theſe have alſo been ſent many, where there was only a probability of the diſeaſe aſſuming that form. If, however, we are to reckon the recoveries which happened on board, under theſe ſuſpicious appearances, the ſurgeons of the Channel fleet would have the credit of reſtoring to health more deſperate caſes of conſumption than are to be found in the records of medicine.

In moſt ſhips, the fox-glove in all its preparations has been tried. Some of the ſurgeons took conſiderable care to obtain the plant in full perfection, and gathered it in the vicinity of Torbay and Plymouth, where it appeared in its uſual vigour. The exhibition of it was watched with more than common attention, as the ſurgeon of a ſhip at ſea has it in his power to viſit his patient with more punctuality than any where elſe. The effects of the medicine were therefore minutely attended to, in the ſtate of the pulſe, the feelings of the patient, and condition of the expectorated matter. The reſults were various, and though, on the whole, much in favour of the digitalis, yet they fall ſhort of what is narrated by others. Indeed, numerous collateral circumſtances are to be weighed in drawing a compariſon between our phthiſis and the diſeaſe, as it occurs in that department of life, from whence only all preceding authors have collected their hiſtory and treatment. The habits acquired by a ſea-life, the nature of diet, the atmoſphere of a ſhip, the viciſſitudes of ſeaſon and climate, to which ſeamen are expoſed, joined to moral cauſes, that give a peculiar character to them, whether in health or diſeaſe, open a wide field

field for obſervation, that cannot be explored by the common rules of inveſtigation. When we ſee a long liſt of caſes, in this or any other diſeaſe, dreſſed out *ſecundùm artem*, for the public eye, aſſerting, in dogmatical terms, the efficacy of particular medicines in the cure, we cannot help repeating, that the reader ought to pauſe and ponder, before he gives implicit faith to their hiſtories.

One of the beſt caſes of phthiſis cured by digitalis, which our catalogue affords, was in a private marine on board the Barfleur, the flag-ſhip of Rear Admiral Collingwood, and attended by Mr. Richard Lloyd. The difficulty of breathing, frequent pulſe, and ſuſpicion of purulency in the expectoration, very quickly yielded after the exhibition of the foxglove. But the patient had none of thoſe exquiſitely formed ſymptoms of hectic, which mark the dangerous ſtage of pulmonary conſumption. The effects of the medicine, in powder, were moſt carefully watched: the higheſt range of the pulſe, at firſt, was 104, or 106; and it was never permitted to ſink below 70. In ſuch caſes it muſt be of great importance to know the healthy ſtandard of the patient's pulſe; for if ſo much ſtrength is abſtracted from the arterial ſyſtem, by the ſtimulus of the foxglove, as to bring the pulſe much below the common number, a great deal of debility muſt be induced, and the diſeaſe augmented. Yet it appears to me, that the virtues of digitalis purpurea have been greatly over-rated; and I rather ſuſpect that theſe unmerited eulogiums will haſten its diſuſe. It is a difficult point, in the practice of medicine, to aſcertain the effects and virtues of an article of *materia medica*. No cure has been effected by foxglove by myſelf.

The *ſquill*, in its manner of operation, and in its effects, very much reſembles the foxglove. It produces nauſea and vomiting, abates the fre-

quency of the pulſe, and powerfully excites the abſorbent ſyſtem. Hence it has been employed in the diſeaſes of the breaſt and in dropſies. In the latter diſeaſe, I conceive it to be a more ſafe and efficacious medicine than digitalis; but it has, I believe, often loſt much of its reputation from want of attention in preparing it. An advertiſed medicine, that has received a long liſt of noble names to recommend it, and ſaid to have put thirty thouſand pounds into the pocket of an impudent and illiterate quack, I think, is ſquill, diſguiſed by ſyrup and aromatics.

My attention was directed to the ſquills a few years ago, by obſerving a great difference in the effect of what was prepared by my brother Mr. Andrew Trotter, now a ſurgeon in North Shields, and the powder made by another perſon, in the treatment of dropſy. My method of preparing the ſquills was to ſlice them in the uſual way, to tie them up in a few folds of paper, and allow them to hang near the kitchen-fire for ſome three or four weeks. They were then pounded carefully, and after being finely ſifted, they were a ſecond time dried in paper, and, laſtly, rubbed into an impalpable powder in a mortar. Of this powder, made into a pill, I uſually gave from fifteen to twenty grains, without the ſlighteſt ſickneſs, in the courſe of 24 hours: but the effect, in producing a flow of urine, was in ſome caſes ſo conſiderable, that rollers were neceſſary to the abdomen; with ſuch rapidity did the ſwellings ſubſide.

If therefore, as I ſuppoſe, there is a ſtrong reſemblance in the operation of ſquills and foxglove; the former, attentively prepared, has a ſtrong claim to our regard in the treatment of pulmonary conſumption, and probably alſo in the cure of ſcrophula.

The

The following communications on the exhibition of digitalis in phthiſis come from two young ſurgeons, whoſe advantages of education, and natural endowments, were capable of directing the medicine with ability equal to any who have ſpoke on the effects of it in cure of this diſeaſe.

" The Right Honourable Lord Aug. Fitzroy, " of a delicate and tall form, with narrow and " depreſſed cheſt, ſquare and prominent ſhoulders, " long neck, fine white teeth, and large blue eyes; " of that particular ſtructure of body, and acute- " neſs of mind, which all writers have charac- " terized as particularly liable to phthiſis pulmo- " nalis; has, to my knowledge, had a cough for " five months; moſt troubleſome in the morning, " with frequent twitches and pain of the ſide, par- " ticularly during eaſterly winds, or thick hazy " weather: hurried reſpiration on any exertion; " a diſtinct attack of hectic fever at noon and " midnight, the latter terminating in profuſe col- " liquative ſweats, with great debility and emaci- " ation. The expectoration was at firſt thin and " frothy; but of late has become more purulent.— " He has been uſing mucilaginous mixtures, with " opium, myrrh, and conſerve of roſes, for the " cough; diluted ſulphuric acid to reſtrain the " hectic ſweats; and tinct. gentian. comp. to ex- " cite an appetite.—Of late there has been a great " tendency to diarrhœa, which was promptly " counteracted, by means of catechu, kino, opium, " and other aſtringents.—The digitalis purpurea I " have alſo carefully tried, to the extent of nine " grs. daily, and continued for a conſiderable time, " without any viſible effect, unleſs exciting a " greater flow of urine.—When I take a retro- " ſpective view of the caſe, I feel the moſt painful " of all impreſſions: I perceive the inefficacy and

" futility of all my labour, and lament the narrow " and contracted ſtate of my knowledge; for, " after the accumulated induſtry and experience " of upwards of two thouſand years, we are yet " only acquainted with the outlines of a great " ſyſtem; and dare hardly give the name of " ſcience to that which has no fixed or determi- " nate principles; but which reſts ſo much on the " feeble baſis of conjecture. In many inſtances " we may inſpire our patient with hope, but can- " not cure his diſeaſe; we can only remain ſilent " ſpectators of a fatal cataſtrophe, and deplore the " inefficacy of the medical art.

" *Oiſeau, Auguſt* 16*th*, 1801. ROBERT ALLAN,
" *Surgeon.*"

This accompliſhed Nobleman died at Briſtol ſoon after, in the 26th year of his age.

" In a caſe of phthiſis which occurred on board, " I made trial of tinct. digitalis. I commenced " giving it in doſes of five drops, four times " a day, and increaſed it gradually to the extent " of twenty-five drops each doſe; which was as " much as the patient could ſafely take. It was " then continued in ſuch doſes, and ſuch intervals, " as to keep the ſyſtem under its influence for a " month.

" During the exhibition of this medicine, the " cough and night-ſweats continued unabated: for " the firſt fortnight the pulſe was reduced from 130 " to 94 in the minute, and the expectoration was " conſiderably diminiſhed; but latterly both the " pulſe and expectoration returned to their former " ſtandard, and I ſent the patient on ſhore.

" *La Nymphe, Nov.* 1801. WILLIAM GRAY,
" *Surgeon.*"

See Mr. Fleming's caſe of phthiſis, among the extracts from his journal.

The uſe of flannel next the ſkin has become a very general practice in phthiſis; and the moment any perſon is phthiſically diſpoſed he is immediately recommended to wrap himſelf in this kind of clothing. But this cuſtom is certainly to be followed with ſome qualification. To preſerve the body in a grateful and equal temperature muſt be very deſirable in this diſeaſe; but it never could be intended to keep flannel ſo long in contact with the human body without ſhifting, as we daily ſee done. Thoſe who wear it ſleep with it on, and muſt very ſoon become offenſive. It therefore ought never to be continued beyond a ſingle night without a change; otherwiſe the body will be confined as it were in a bath of impure air, that ought to be exhaled inſtead of being accumulated. Very frequent ablution of the whole ſurface ſhould be regularly attended to during the uſe of flannel.

But if the weakly and valetudinary have ſafely indulged in this practice, it never was meant that the young and healthy ſhould have recourſe to ſuch effeminate modes of clothing. The cuſtom, however, has become ſo general, that we are in danger of loſing the hardihood and vigour of our national character from its uſe. Flannel and fleecy hoſiery are to be found under the ſhirt, among half of the young men of the age, whoſe habits of changing them are not more delicate than others I have mentioned.

After being much weakened by Weſt India ſickneſs, I had recourſe to flannel next the ſkin; but in cold weather I now find more advantage by wearing it over the ſhirt, and think that I have

fewer attacks of catarrh in variable weather from this, and the cuſtom of general ablution.

Although I was at one time a great advocate for flannel next the ſkin, I am now rather diſpoſed to prefer wearing it over the linen, and to recommend daily ablution of the whole body, to inure it to the weather.

The following caſe is intereſting, whether we conſider the digitalis as ſuſpending the diſeaſe, or the ſingular cauſe of its production.

Caſe of Phthiſis from ſwallowing a Plumb-ſtone, by Mr. WEST, *Surgeon of Sick and Hurt.*

(*Communicated by Mr.* CARRUTHERS.)

Poole,

" Maſter William Oke, the ſon of an eminent " and reſpectable merchant in this place, was " brought from ſchool, and placed under my care, " about the middle of October 1800. From his " own relation, I found he had been attacked " about three weeks prior to this with ſevere " rigour, ſucceeded by febrile ſymptoms; hard " dry cough, a ſenſe of uneaſineſs about the cheſt, " and a general efflorescence over the whole body. " When I firſt ſaw him, he had a pulſe of 120, " with febrile exacerbations, profuſe night-ſweat- " ing, and a heavy expectoration of matter, ſo " purulent as to emit a diſagreeable fœtor; cough " almoſt inceſſant, with conſiderable dyſpnœa. " With ſo many concurring teſtimonies, I did " not heſitate to pronounce, that the diſeaſe had " paſſed its incipient ſtage, and was aſſuming a " very formidable appearance. A bliſter was ap- " plied to the cheſt, the bowels looſened, and the " ſaturated

" ſaturated tincture of digitalis prepared, agreeable
" to Dr. *Maclean*'s preſcription, was entered on
" immediately. He began with eight drops twice
" a day, increaſing the doſe gradually every day,
" until ſixty drops were taken in the courſe of 24
" hours; at times a ſlight nauſea, with vertigo,
" would ſupervene, and oblige me to omit it
" wholly for ſome days, and then go back to the
" original doſe; the pulſe, after the firſt few days,
" came down to 70; the expectoration (after a
" few weeks) leſſened every day, and once, as far
" as reſpects its purulence, totally diſappeared;
" his night-ſweating was conſiderably diminiſhed,
" and his febrile exacerbations were gone. How-
" ever, with all theſe favourable circumſtances,
" and notwithſtanding his ſteady perſeverance in
" this moſt powerful remedy, the cough occaſion-
" ally returned, and the expectorated matter aſ-
" ſumed its former colour. I did not heſitate now
" to pronounce the caſe a hopeleſs one; at the
" ſame time urged the neceſſity of continuing the
" digitalis unremittingly. It was puſhed on to its
" full doſe of twenty drops twice a day until the
" middle of Auguſt 1801, when he was attacked
" with violent vomiting and threw up a plumb-
" ſtone, which he recollected to have ſwallowed
" ſome time prior to his being taken ill, and
" which ſtuck in the œſophagus, and was puſhed
" down with the probang, by a ſurgeon of the
" place. From this moment a conſiderable dimi-
" nution of the ſymptoms took place, and in the
" courſe of three weeks the whole of his com-
" plaints were gone.

" Quere. Would not this patient have fallen a vic-
" tim to what in this caſe muſt be termed ſympathe-
" tic conſumption, if the digitalis had not rendered
" ſtationary the moſt prominent features of the
" diſeaſe?"

MEDICINA NAUTICA.

SPASMODIC AFFECTIONS, &c.

I CANNOT bring the preſent article under any generic term; but various ſpaſmodic affections, chiefly of the alimentary canal, ariſing from different cauſes, and often attended with low ſpirits, having occupied much of our practice during the war, and as it is a new ſubject in nautical medicine, unfolding ſuch peculiarities in the conſtitution of officers and ſeamen, that it would be unpardonable to paſs it by.

That a body of men, by education and habit accuſtomed to adventure, braving danger in every hideous form, and ſurpaſſing hardſhip, famine, and fatigue in every ſhape, (the very relation of which appals the puny imagination of timid minds, enfeebled by luxury and delicacy in the faſhionable or retired walks of life,) ſhould be ſubject to complaints more nearly allied to the tender female than the robuſt maſculine conſtitution, would appear a paradox, did not daily experience confirm the fact. The great and the little are blended in the motions of health and diſeaſe, in our phyſical as in our moral frame: The hero and the infant here unite: The athletic

athletic male and the hyſteric woman; for we have often ſeen their complaints ſo much alike, that no diſtinction could be drawn between them. The body cannot be always employed in manly toils or active exerciſe; it muſt ſometimes relax. The mind is incapable of being always occupied in ſublime or ſerious ſtudies; it muſt occaſionally unbend itſelf, deſcend to the common levels of life, grow gay amidſt trifles, *dulce eſt deſipere in loco*, that it may reſume its purſuits with renovated vigor. Diſeaſes thus undergo ſimilar variations; they aſcend by increaſed incitement to inflammatory diatheſis, and they deſcend by ſubduction of ſtimuli to extreme debility.

Homer, who knew the human mind and character as well as any modern philoſopher, employs his hero with muſic on quitting the field of battle, which was, perhaps, nothing more than ſome trifling love-ſonnet in praiſe of Briſëis. The tears of Alexander might be a nervous feeling like the hyſteric paroxyſm after a laſt night's debauch; and Xerxes, weeping at the thought that ſo many thouſands of his huge army muſt all die in ſo ſhort a ſpace, was probably gaſping with the *globus* in his throat. The Britiſh naval hero, not inferior to Greek or Perſian name, may therefore be allowed to exemplify the ſame extremes of the great and the little, in his compoſition, in his pleaſures, his paſſions, and diſeaſes.

The naval character muſt be delineated and ſtudied throughout in all its ſhades and gradations, in health and in ſickneſs, in order to arrive at a perfect plan of prevention, or to preſcribe with deciſion a ſucceſsful method of cure in its diſeaſes.

Nervous feelings, nervous affections, or weak nerves, though ſcarcely to be reſolved into technical language, or reduced to a generic definition,

are

are, in the preſent day, terms much employed by medical people, as well as patients, becauſe the expreſſion is known to comprehend what cannot be ſo well explained. An inaptitude to muſcular action, or ſome pain in exerting it; an irkſomeneſs or diſlike to attend to buſineſs or the common affairs of life; a ſelfiſh deſire of engroſſing the ſympathy and attention of others to the narration of their own ſufferings, with ficklenefs and unſteadineſs of temper, even to irraſcibility, and accompanied more or leſs with dyſpeptic ſymptoms, are the leading characteriſtics of nervous diſorders, to be in general referred to debility, increaſed ſenſibility, or torpor of the alimentary canal.

The hiſtory of the diſeaſe itſelf comprehends the ſymptoms, and often aſſumes the form of almoſt every other. This Protean form alarms the patient, and excites a thouſand imaginary fears. Pains, ſtitches, or cramps of the muſcular parts; contractions of the joints; ſpaſm and paralyſis of the ſphincters, from whence obſtinate ſuppreſſions of urine, and retention of the fæces; diſtortion of the countenance and eyes; twinkling of the eyelids; inability to cloſe the eyelids; at other times, when ſhut, unable to open them; pupil of the eye dilated and inſenſible, ſometimes contracted, and the iris extremely irritable; profuſion of tears; dimneſs of ſight; double viſion; hearing acute, or the contrary; the external ear cold to the touch; *bombi* or *tinnitus aurium*; ſmell deficient; *hemicrania*; vertigo; coldneſs of the occiput; general chilline ſs, alternated with flu ſhing; coldneſs of the feet; cold ſweat on the palms of the hands; ſhivering; ſenſe of creeping on the ſkin; red ſpots, or eruptions of the ſkin, alternating with dyſpeptic feelings; bad taſte in the mouth; exceſſive thirſt; foul tongue; difficult deglutition; *hydrophobia*; nauſea; eructations from the

the ſtomach; pain and diſtention of the ſtomach; heartburn; *borborrygmi*; gripes; ſudden dejections; diarrhœa, but more frequently coſtiveneſs; *globus hyſtericus*; a ſenſe of *vacuum* about the region of the ſtomach, as if diſembowelled; pains about the liver, aſcending to the ſhoulder, as in hepatitis; jaundice; pains about the region of the kidneys, and deſcending to the ureters and neck of the bladder and glans penis; ſtrangury; urine crude, pale, or high coloured, at one time voided in great quantity, at another time ſcarce; appetite irregular, at one while voracious, and at another deficient; deſire for uncommon kinds of food; ſickneſs at the ſight of particular objects and perſons; worms; ſighing; moaning; ſudden laughter and crying; permanent hiccup; cough; ſometimes reſembling pertuſſis; ſneezing; panting; breathing ſhort and laborious; dyſpnœa from particular effluvia; ſpitting; pervigilium, ſometimes for weeks together; ſleep diſturbed by fearful dreams; *incubus*; palpitation of the heart; uncommon ſenſibility to arterial pulſation, particularly of the äorta, expreſſed by ſaying that they have pulſes every where; pulſe irregular and intermittent; tremours; convulſions; &c.

Vomiting, and ſometimes purging of bilious matter, or temporary cholera, have given to this complaint the term *bilious* ſo often uſed by dyſpeptic people. Thus people call themſelves bilious, are apt to get into long narrations of what generates bile, and what is beſt to remove it when over-abundant. Inverted motions of the duodenum and pylorus probably force the bile into the ſtomach, and thus create pain, nauſea, and vomiting. The liver, in this diſeaſe, is, however, very frequently affected; the bile is at one time in great quantity, and at other times, not only ſcarce, but probably alſo deficient in acrimony and viſcid in conſiſtence; which

which may occaſion coſtiveneſs, as its increaſed acrimony may excite diarrhœa.

The ſtate of mind which attends this condition of body is difficult to be deſcribed: if it purſues any particular train of thought, it is chiefly to the patient's unpleaſant feelings, and ſeems ſuſpicious and jealous of every attempt to change the ſubject. He, therefore, takes a particular delight in recounting his ailments, attaches himſelf to thoſe who liſten to him with patience, and accuſes others of want of ſympathy; hence the temper is ſoured with trifles, becomes fretful, irritable, and paſſionate. This gloomy turn of mind often aſſumes a temporary derangement of intellect, and not only forgets all its old attachments, but ſhews the utmoſt ſigns of diſlike to thoſe who had been moſt dear. Contradiction in converſation, diſappointment of any thing wiſhed for, jealouſy, and other paſſions, are apt to bring on ſtrong paroxyſms of this diſeaſe.

Mr. Farquhar, ſurgeon of The Captain, mentions a very ſtrong caſe of jealouſy that happened in that ſhip, and in a very reſpectable ſeaman rather advanced in life. He had at times been obſerved to have frequent hyſteric fits, in every ſymptom reſembling thoſe of women; and they were evidently excited by jealouſy. His wife was young and remarkably handſome; and theſe fits were often cauſed by other men paying her attention. Dejection of ſpirits commonly ſucceeded the paroxyſm.

There is perhaps no affection that attends our frail ſtate of exiſtence that harrows the human ſoul with ſuch tortures, as this exceſs of nervous ſenſibility. They may be juſtly compared to the torments of the damned. That ſpecies of it, where imagination paints to the patient legions of blue devils hovering around him, as if to convey him to Tartarus, is a moſt horrid and lamentable

mentable inſtance of mental deluſion. The ſtrongeſt of the kind I ever ſaw, was in a young man of the Roman catholic perſuaſion, from a habit of hard drinking. The countenance exhibited the ſigns of what was paſſing within, in the moſt frightful expreſſions of horror, whenever the paroxyſms recurred. The prieſt was uſually ſent for; confeſſion and abſolution were the conſoling opiates to this wretched inebriate; and the cloven-footed troop took their departure on being rebuked by the apoſtle of the church.

Such are the ſymptoms and feelings of nervous affections, attended with more or leſs of dyſpepſia.

There is a ſomething in the atmoſphere of a ſhip, perhaps deficiency of oxygene, and the local confinement on board, that, to particular perſons, are a never failing cauſe of vapours and dyſpeptic feelings. The motions and actions of the ſtomach and inteſtinal canal are retarded and become irregular, and habitual coſtiveneſs at ſea is common in many conſtitutions. I do not think that this depends ſo much on the ſea diet as has been generally imagined. The ſituation itſelf affords leſs variety than moſt other conditions of life; day after day you go through the ſame kind of routine, the ſame objects are preſented to the eyes, the ſame ſmells to the noſe, and the ſame ſounds to the organs of hearing. As all ſtimuli loſe their effect by repetition, and as a peculiar train of ideas ſo naturally follows external impreſſions on the organs of ſenſe, that condition of mind is generated which is uſually ſtyled nervous. But the effect appears to fall chiefly by ſympathy or aſſociation on the ſtomach and bowels. This complaint, therefore, belongs with more propriety to the catalogue of the ſea diſeaſes than has been either ſuſpected or believed; and, if we may judge from the multitude of caſes which have come under

under our obſervation, it ought to be conſidered as a very common one. I have ſeen in a ſick-berth, at one time, no leſs than five or ſix ſtrongly marked inſtances of violent hyſteria. Long cruizes in bad weather, joined to ſevere and irkſome duty in the foggy and variable climate of the channel, will, at all times, produce theſe complaints; ſuch is the duty of a blockade. On the contrary, I believe the diſeaſe is little known in the ſouthern latitudes, for I have ſeen both officers and ſurgeons prefer a Weſt India ſtation, ſolely with a view to eſcape it, which they could not do in the home cruizes.*

What may be called the gouty conſtitution, and an hereditary diſpoſition to the diſeaſe, will pave the way for its frequent recurrence on board; but there are other cauſes, which, by debilitating the general

* When Earl St. Vincent aſſumed the command of the fleet in the channel, many changes took place, both in the internal diſcipline of the ſhips, as well as in the general manœuvres of the whole. This illuſtrious officer, during the diſorders of the navy, 1797, had made himſelf a terror to evil doers. By promptitude and deciſion peculiar to himſelf, he ſubdued the hydra in embryo, quelled the licentious ſpirit that elſewhere brought Great Britain and her navy to the verge of the grave, and, by equal intrepidity, addreſs, and example, reſtored order and obedience to his ſquadron. While his talents in naval tactics ſhall employ the hiſtorian, this part of his character will not be forgot. The appearance of his flag in the channel, while it infuſed energy and activity into every department of ſervice, had alſo a moſt ſenſible effect upon men of particular deſcriptions; for, independent of long cruizes and ſevere duty, complaints ſtrictly *nervous* became more prevalent; they alſo diſappeared, in a great degree, at his departure. There are certainly men who might feel thoſe commotions of ſenſation which lead to nervous and ſtomach complaints on ſuch an occaſion as this; as they might be led to remember thoſe dreadful examples which juſtice required during a ſyſtem of terror. In my ſecond volume are made ſome remarks on the ſtate of the people on board the hoſpital ſhip at the time of the diſorder of the fleet, and they exactly reſembled what now appeared among many of the ſeamen.

habit,

habit, and particularly the ſtomach and inteſtines, that lay the foundation for the moſt painful and obſtinate nervous ſymptoms.

When a patient of this kind has been preſented to me, more than half his hiſtory could be read in his countenance. Some of theſe have been not a little ſurpriſed at the facility with which I got into their private concerns; and they ſuppoſed that I muſt have had ſome previous acquaintance with their ſituation in life: but no divination was required; it unravelled itſelf. I have met caſes from diſappointments in the tender paſſion, that could ſcarcely be expected to exiſt among ſuch people as Engliſh ſeamen.

The fevers and fluxes of tropical countries often effect prediſpoſition to this malady. Some years ago I experienced the truth of this remark after a fever at Jamaica. Such was the ſtate of my ſenſes, that I ſcarcely thought I ſlept a ſingle hour in the night during the whole paſſage home. I was much troubled with palpitation, fainting, and vertigo: My pulſe was uſually upwards of 120. It was twelve months before theſe affections diſappeared. Few Europeans have lived long in the Eaſt or Weſt Indies but feel more or leſs of dyſpepſia or weak nerves when they return to their own country. This may be, in a great meaſure, owing to living on high-ſeaſoned food, ſo common in both Indies, but there is probably alſo a gradual diſpoſition induced from the exceſſive heat of the climate. The ſexual appetite is ſtronger in a warm than in a cold region; as are all other paſſions of the exciting kind, but which, too often indulged to exceſs, indirectly debilitate, and generate mobility of the nervous ſyſtem.

In the Weſt Indies, nothing appeared to me ſo unnatural and prepoſterous as the quantity of ſpice,

particularly the hotteſt pepper, which is uſed in ſoups, and other diſhes. It is uſual for Europeans, when challenged on theſe occaſions, to quote the good effects they have on the ſlaves and natives. But it ought to be obſerved, that their food is chiefly vegetables, and deficient in ſtimulus. Animal broths, and ſolid beef or mutton, or poultry, can need no ſuch exciters in a healthy ſtomach. Hence a great degree of torpor and languor ſucceeds before the next repaſt, and, to give the diſh its uſual reliſh, the high ſeaſoning is continued, till the uſe of pepper is confirmed into a habit that cannot be overcome. It will be particularly felt on returning to a cold climate, where the body loſes an immenſe degree of excitement from the diminiſhed external heat; and thus the ſtomach ſuffers from ſympathy in conſequence of that. The variable atmoſphere of our iſland ought alſo to be taken into the account. The haughty ſpirit of the planter may likewiſe feel ſome chagrin on the tranſition of manners in ſociety, when he is no longer ſurrounded by the obſequious compliance of the enſlaved and degraded Africans.

But perhaps the moſt fruitful ſource of nervous diſeaſes is hard drinking, particularly of ſpirits. This depraved cuſtom is, alas! too common in a ſea life. The ſtomach, as it firſt receives, ſo it firſt feels, the baleful influence of this deſtructive ſtimulus. Its ſenſibility is preternaturally increaſed till it is worn out; the fibres are contracted and indurated; the glands which ſecrete mucus and gaſtric juice are, from exceſſive action, ſoon obliterated, and nothing but an uncommon quantity of the ſpirit can at laſt convey to the extinguiſhed nervous energy that degree of excitement which affords pleaſing ſenſations to the ſhattered frame of the inebriate. This highly ſenſible organ, from its ſympathy with every

every other part, is thus debilitated, and communicates with the whole nervous ſyſtem. Dyſpeptic affections and liver complaints appear firſt, and to which quickly ſucceed the horrid train of hypochondriacal and nervous diſorders, till nature, exhauſted and worn down, yields to palſy, dropſy, &c. I think the uſe of tobacco, ſo very common among ſeamen, alſo tends to induce ſimilar diſeaſes.

Mercurial courſes for the cure of ſyphilis are often the cauſe of permanent nervous affections. Mercury, in its different forms, is often, from the fault of the medical preſcriber as well as the patient, injudiciouſly adminiſtered. But the employment of the naval officer and ſailor is peculiarly unfavourable to conduct a long mercurial regimen, whether from lodging, climate, or weather. They are both apt to conceal their complaints in the early ſtage, and, if in the end they fall into ignorant hands, a loſt conſtitution is too often the conſequence. In ſome habits ſtrongly charged with mercury, I have witneſſed extraordinary hyſterical and epileptic paroxyſms. But a common courſe of mercury, however judiciouſly managed, diſpoſes to nervous weakneſs. As ſoon as it affects the body, ſome degree of fever is produced, anxiety, reſtleſſneſs, want of appetite, headach, and irritability of mind. The neceſſity of carrying the practice ſtill farther, and exhibiting freſh quantities of the medicine at intervals to ſubdue an inveterate diſeaſe, favour the recurrence and continuance of nervous mobility, which, if it can be overcome at laſt, requires a long time. I have known ſome melancholy caſes of nervous diſeaſe occaſioned by mercury adminiſtered with very little diſcernment in what was ſuppoſed to be hepatitis, from a pain extending from the region of the liver upwards to the ſhoulder: but, from other ſymptoms, it was plain that the diſeaſe was more nearly

allied to dyſpepſia, and the patient got relief by a different mode of treatment. It is thus that weakneſs of ſtomach, and all the painful complaints which flow from that, are often laid in infancy and childhood, from the too common cuſtom of purging children, and giving mercurial medicines as a vermifuge. Theſe, with tea drinking when very young, joined to a ſedentary life, ſeem to lay the foundation for the ruin of health in the delicate female conſtitution in this country. The enormous quantity of calomel lately preſcribed by ſome phyſicians in the yellow fever, will probably prove a ſimilar ſource of diſeaſe to thoſe who may chance to ſurvive this unaccountable practice.

Great cautions in all conſtitutions are required for the ſafe adminiſtration of mercury, but particularly in thoſe who have weak viſcera, or inclined to bad digeſtion. Hence the method of inunction is preferred, as the body by this way can be ſaturated without the intervention of the bowels. Yet, in ſome people, even this form has a hurtful tendency, and is occaſionally, from expoſure to cold and damp weather, thrown upon the inteſtines. The *modus operandi* of mercury is not well underſtood, but it muſt always be beſt to truſt to the milder preparations. *Hydrargyrus muriatus* is ſtill uſed by ſome, but I have ſo often witneſſed its bad effects, with all the care that could be taken, that I never think of employing it. This form, as being eaſily diſguiſed, is ſuppoſed to be the baſis of the quack medicines; while others, perhaps more from a ſpirit of quackery than any thing elſe, give it in pills, at the ſame time aſſerting, that, if the patient has not contracted the venereal diſeaſe himſelf, he has received it from his parents. Some ſhocking hiſtories of this kind are to be met with in naval ſervice, with which our pages cannot be bloated.

Such

Such do we ſuppoſe to be the moſt frequent cauſe of low ſpirits, hypochondriacal and dyſpeptic affections, as exemplified in ſhips.

An original temperament of body, ſuch as what have been called *ſanguineous* and *melancholic*, may give reaſon for diſtinction in ſome of the characteriſtics of the affections which are the ſubject of this ſection, and may alſo occaſion variety of treatment. Thus the ſanguineous habit has a ſtomach and bowels more irritable and eaſily affected with ſlight cauſes: whereas the melancholic temperament exhibits much torpor and immobility of the nervous ſyſtem. But the diſeaſes being chiefly ſeated in the alimentary canal; in a practical work like this, I do not find it neceſſary to purſue the diſtinction farther.

The *cure* muſt depend much on a knowledge of the cauſes which have induced the diſeaſe, ſo as carefully to avoid them; but, when it has continued for any length of time, it is too often impracticable. Who can cure habitual drunkenneſs? Or what medicine can repair a conſtitution ſhattered by mercurial courſes?

It is the fate of war, that numbers of ſeamen are brought into the naval ſervice againſt their inclinations; many of thoſe under circumſtances ſingularly ſevere; as happen to men that are impreſſed immediately on coming from foreign voyages, without even hearing of their relations, far leſs having a ſight of their families. Noſtalgia, which I take to be only a variety of hypochondriaſis, is ſometimes ſtrongly marked in theſe caſes, and emphatically ſpeaks the language of human nature. How diſgraceful is this practice to a nation that calls itſelf the moſt free on the face of the earth, that deprives of the priviledge of citizenſhip thoſe men to whom it owes its ſecurity, and to whoſe

valour the ſound of applauſe has been conſtantly heard! But it ſeems that only empty praiſes are returned for the firſt of all ſacrifices, a ſurrender of their liberty. The preſent war has given birth to much warmth in the diſcuſſion of political ſubjects. But what authority can juſtify the involuntary ſervice of any particular claſs of men? African ſlavery has been diſcuſſed among us; but, though Chriſtianity is the national religion, there ſeems ſo little of the ſpirit of it in the country, that the ſlave-trade ſtill continues, and ought to continue, if there is no remedy againſt impreſſing ſeamen.

Low ſpirits and ſtomach complaints, as ariſing from mental affliction, are often to be traced to the particular ſituation of the patient. In ſuch caſes we have only to lament the inefficacy of our art. Articles of materia medica have ſmall effect on that part of the human frame that is worn down with anguiſh of mind and tortured with corroding cares.

> Canſt thou not miniſter to a mind diſeas'd,
> Pluck from the memory a rooted ſorrow,
> Raſe out the written troubles of the brain,
> And with ſome ſweet oblivious antidote,
> Cleanſe the foul boſom of that perilous ſtuff
> Which weighs upon the heart?
>
> SHAKSPEARE.

However deſirous a phyſician may be to ſympathize with the feelings of his patient, in public ſervice he is apt to deſert his duty if he yields to their impulſe; for, in this diſeaſe beyond all others, the firſt ſtep to a cure ought to be change of ſituation. Much, no doubt, may be done by advice and gentle treatment, by encouraging him with the hopes of a ſpeedy recovery, and the return of peace. I have ſeen much relief obtained by changing the ſleeping place from the cock-pit to the upper deck, or from between decks to ſome better ventilated ſituation.

tion. Surgeons' mates, whoſe education has added to refinement of feeling, often embittered, perhaps, with the neglect which naval ſervice impoſes on their corps, are very frequently affected with low ſpirits. We alſo, on many occaſions, meet with young officers, as well as old ones, of all deſcriptions, whoſe ſenſibility has long ſmarted under unmerited diſappointment of honours in the line of their profeſſion. Can any misfortune in life be more galling to a brave man, conſcious of his right to promotion, than to ſee another preferred before him, without even a ſingle pretenſion? Diſappointments of this nature have brought many worthy officers to an early grave, and induced afflictions of body and mind that nothing beſide could have produced. Ye rulers of the earth! Ye diſpenſers of honours! whom high heaven has deputed to do juſtice here below, remember that there is another world, where all your favours will undergo a ſcrutiny, and be tried as in a balance!

In the year 1800, I met with a curious caſe of ſpaſmodic affection in a young officer of great merit. Being deſcended of gouty parents, I ſuſpected a ſtrong prediſpoſition to the diſeaſe depended on that habit of body. He had various dyſpeptic ſymptoms, but the moſt painful complaint was the total loſs of voice. Nothing could ſurpaſs his laboured articulation, and the throes he made as he attempted to ſpeak. He was relieved by the fetid gums, and exerciſe on horſeback as much as he could bear, when the weather was at all tolerable. This gentleman had been tantalized by hopes of promotion for a length of time, but poſſeſſed too fine a feeling, and too delicate notions of honour, to remain inſenſible of neglect.

I wonder much if ever our medical brethren of the army meet with ſuch diſeaſes from ſimilar cauſes,

where the heavy purſe ſo often ſupplants merit in the purchaſe of commiſſions; a practice that has heretofore made our army a taunt and a proverb among the nations!

When ſhips return to port, as the beſt mode of geſtation, I generally recommend riding on horſeback to officers. This, beſides the exerciſe and motion which it affords, preſents a variety of images to the mind, which cannot fail to introduce a new train of ideas, and thus re-act on the body, but particularly on the ſtomach and inteſtines. This ſeldom fails to do good; and, if the ſhip is allowed to remain a fortnight in port during clear weather, a cure is obtained without much medicine. Exerciſe on horſeback, as being ſo oppoſite to any kind of muſcular action or amuſement that can be obtained on board, is, to the ſea-officer, by far the moſt ſalutary. After he is thus refreſhed and recruited, both body and mind return to ſea duty with an energy of the nervous ſyſtem that qualifies for another cruize, and thus preſerves the ſpirit of enterprize.

But in all ſituations of life, on ſhore or on board, a change of ſcene is uniformly beneficial to low ſpirits, and to all dyſpeptic patients. The variety of objects which are continually preſenting themſelves, force attention from a deſponding mind, and gradually introduce new feelings that entirely ſupplant the former, ſo as to prevent their recurrence.

The naval hoſpitals are very little to be preferred to a ſhip in the treatment of this diſeaſe. They afford no amuſement to ſeamen, and the great pleaſure in coming on ſhore is to make the beſt uſe of their cunning to be put down on the liſt of invalids. All energy of mind is loſt within theſe walls, and muſt be, till ſome means are deviſed by officers of addreſs and intelligence to ſhake off that languor and

and indolence which we obſerve ſo general in the wards. A ſhip under fine regulations of command, where much etiquette is required in performing duty, that keeps the ſeamen in a conſtant ſtate of alertneſs and activity, is above all other means at ſea the beſt calculated to prevent thoſe diſeaſes which ariſe from depreſſing paſſions, and thoſe in particular of which we are now treating.

When the ſcurvy begins to appear in ſome conſtitutions, timidity and deſpondency, in the form of the hypochondriacal affection, are common ſymptoms. Diſcernment is therefore required to diſtinguiſh between the diſeaſes. Scurvy is not attended with any dyſpeptic feelings, and is chiefly to be known by the diet which the patient has been living on ſome time before. The cures of ſcurvy and dyſpepſia with low ſpirits, are in direct oppoſition to one another, and it is of conſequence in the practice to be duly informed. *

In patients who may be called conſtitutionally dyſpeptic, or naturally ſubject to indigeſtion from a weak ſtomach, their complaints are commonly induced by irregularities in diet and affections of the mind. Such perſons, on ſlight occaſions, are liable to gaſtrodynia, heartburn, flatulency, &c. from particular kinds of food, ſuch as ill-fermented bread, vegetables, fruit, malt liquor, and weak ſharp wines; theſe ſymptoms are alſo frequently induced by mental inquietudes, and whatever ruffles the temper. A certain ſallowneſs of countenance is ſufficient to indicate the dyſpeptic habit, and, from the different ſhades of colour, the leſs or more aggravated attacks of the complaint. A more than

* The lemonade lately made a part of ſea-diet has alſo contributed to the production of dyſpepſia in many perſons predifpoſed to that complaint.

uſual quantity of bile taken into the circulation would ſeem to give this hue to the complexion, as the *tunica adnata* is yellow as well as the ſkin. This ſuffuſion of bile is probably owing to that fluid being retarded in the ducts which convey it to the gall-bladder and duodenum, whether from obſtruction or ſpaſmodic affections of theſe; by which cauſe it is abſorbed and carried into the blood. This alſo occaſions coſtiveneſs, the periſtaltic motions of the inteſtines not being ſufficiently accelerated by the ſtimulus of the bile. The irregular and inverted action of the inteſtines often forces the bile into the ſtomach, which excites nauſea and vomiting; and thus the term bilious complaint, ſo common in the mouths of people of this temperament.

A ſingular irritability appears to reſide in the dyſpeptic habit, which ſubjects many to a miſerable ſtate of exiſtence. When it ſo happens with an officer, thoſe beneath him too often feel the effects of a capricious temper and unmerited reſentment. Such officers, in their cool moments, would do well to guard and prepare againſt every thing in giving command that is apt to ruffle their diſpoſitions, as the feuds and animoſities which it produces often lead to reproachable conſequences that degrade public ſervice.

The treatment of habitual dyſpepſia is often a difficult matter; many of theſe patients are accuſtomed to modes of living that are inconſiſtent with a regimen of health. We too often obſerve them indulge in the moſt luxurious and high-ſeaſoned food; common fare, they tell us, is too cold, too weak for their ſtomachs; they muſt drink ſpirits after meals, muſt eat Cayenne pepper with their fiſh, and have their ſoups and puddings ſpiced with the ſtrongeſt aromatics. Such people are always languid, inactive, and in a ſtate of

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ennui till dinner-time; when the more powerful ſtimuli of food and wine bring forth their agreeable ſenſations. Theſe are the patients in this age devoted to gluttony and ſloth, who devour the enormous quantity of ſpirituous tinctures that are daily ſold in the ſhops of our druggiſts and apothecaries. Hence the uſe of raw ſpirits, and all the horrors which follow ſolitary dram-drinking!

Great caution is required in the uſe of emetics, in ſtomach complaints, or what are vulgarly called bilious attacks. The condition of the ſtomach is rather to be corrected than evacuated. If, however, the nauſea is great, a few grains of pulv. ipecac. will ſuffice; or a weak infuſion of chamomile; always avoiding tartarized antimony, which, in ſtomachs very weak or ſenſible, is often attended with painful conſequences. It ought, however, to be remembered, that the ſtrongeſt emetics are often neceſſary in the torpid melancholic temperament; as the diſeaſe in ſuch habits ſeems to depend much on the vitiated and ſtagnating contents of the ſtomach, inteſtines, and biliary ducts, which are thus to be excited and evacuated. Should the vomiting be followed with no relief downwards, ſome aperient medicine muſt be given. Here much is to be left to the choice of the patient; for he will be commonly found to have ſome favourite purge, which he takes when neceſſary. This is a common practice with dyſpeptics; and they are in general the greateſt favourers of quack medicines ſo prevalent in this country, which ſo much diſgrace our national character. Aloes, in the form of pills, have been ſaid to be the moſt eligible purge in habitual coſtiveneſs: but as it is commonly proper to join ſome article to correct acidity, rhubarb, or jalap, with calcined magneſia, natron, or kali, are preferable. All mercurial preparations

preparations I conceive to be hurtful in irritable conſtitutions, though ſometimes preferred from being quick in operating. The bowels being thus cleared, muſt be preſerved regular; of this we are reminded enough by the patient, who conceits odd things from the condition of this diſcharge.

Medicines which invigorate the ſtomach may be now tried; ſuch as bark, columba, quaſſia, and ſuch like. Much attention is required in the exhibition of theſe articles, as well from the delicate ſtate of the ſtomach, as from the fickleneſs of the patient. If he has been accuſtomed to ſpirituous tinctures, or ſtrong wines, it will be a difficult taſk to overcome his diſlike to medicines that do not afford that glow and warmth which he has felt from the others. But reaſon ought to be employed where phyſic fails; and the patient ought to be warned againſt the moſt pernicious of all habits. As acidity is a conſtant attendant of indigeſtion, calcined magneſia, lime-water, natron, prepared kali, or even the water of pure kali, ought to be uſed, either by themſelves or joined with the former articles. Small doſes of the bitters ought to be given at firſt, and they ought never to be continued longer than ten or twelve days at a time. After a week's interval they may be reſorted to again, accompanied with ſome form of chalybeate; which, as it may be found to do good, may be perſiſted in, and the bitter left off entirely.

The warm gums, as they are called, are very commonly employed in theſe complaints: aſa-fœtida has been deſervedly preferred; they gently ſtimulate the bowels, and have the beſt effect in relieving flatulency and diſtention of the inteſtines, that are equally painful and diſagreeable. Vitriolic æther is alſo of great benefit in cramps and ſpaſms

that

that attend ſuch affections; and I have generally found it do more ſervice than opium, the uſe of which, in dyſpeptic ſtomachs, has long appeared to me hurtful, and apt to produce convulſions.

When ſteel is reſorted to, which of all medicines promiſes the moſt permanent relief, it ought to be preceded by clearing the bowels, and a few days uſe of ſome gentle bitter, valerian, &c. I prefer the limature, or rubigo ferri, beginning with very ſmall doſes, and increaſing them very gradually, ſo as never to endanger any uneaſineſs of ſtomach, otherwiſe it may be left off; and no argument will perſuade to a new trial. A ſmall pill may be waſhed over with Skeete's infuſion of bark *, which is the beſt ſuited to delicate ſtomachs of any that I am acquainted with. Lime-water will alſo anſwer this purpoſe, or even common water, into which may be put a few drops of the water of pure kali, having always a view to correct the acidity, which is ſo apt to excite many troubleſome ſymptoms.

The food ought to be adapted to the peculiar condition of the ſtomach, to eat often and little at a time; the meat ought to be under-done; malt-liquors and vegetables and fruit cautiouſly uſed; meat-ſuppers may be indulged in; the ſtomach is apt to ſicken when empty. With delicate ladies I have often recommended a thin ſlice of tongue, ham, or ſalted beef, immediately on waking, as the beſt preventive of morning nauſea. In caſes of obſtinate habitual coſtiveneſs, great advantage may be derived from the patient living

* This elegant form of exhibiting cinchona, is made by triturating magneſia with bark, which facilitates the ſolution of the reſinous part, ſo as to render it ſtrong of the medicine, and at the ſame time giving a fine red tincture. ——See SKEETE's Experiments with Bark.

much

much on animal broths, and avoiding ſolid fleſh-meats, and eſpecially bread. Theſe broths, or ſoups, very much leſſen the bulk of the inteſtinal maſs, when the more fluid part has been taken up by the lacteals: hence the periſtaltic motion goes on more regularly; and diſtention and pain, from flatus being accumulated in particular portions of the inteſtines, are in a great meaſure prevented. Such people would ſeem to require a larger proportion of liquid aliment than others: for, whether from the food being retarded by a weakneſs of muſcular fibre in the bowels, or from greater energy in the abſorbent ſyſtem, the fœcal contents certainly become more dry and lumpy, and deſcend with difficulty; and thus excite thoſe ſingular commotions and irregular ſenſations, which diſturb and haraſs the whole nervous ſyſtem. Our opinion of geſtation and exerciſe is given at ſufficient length above.

To perſons debilitated in ſtomach and bowels by ſevere courſes of mercury, a regular and temperate life can alone give relief; if from the ſhattered remains of a conſtitution they wiſh to regain health: in other reſpects the general method of cure delivered above applies alſo here.

Flannel worn next the ſkin has been cried up by many, in the treatment of ſtomach complaints, from the ſympathy that is ſaid to exiſt between that organ and the ſkin. I think better effects are to be derived from daily ablution of the ſurface of the body. The one practice is to ſoften the ſkin and render it too delicate; whereas the other tends to fortify it againſt the rigours and changes of ſeaſon, and by preſerving it pure and pervious, promotes the cutaneous diſcharge. Thoſe who wiſh to try this practice of waſhing the whole body every morning with reſolution and perſeverance, will ſoon

ſoon find reaſons to make them continue it for life.

Moderate exerciſe in the open air, when the weather will permit, ſhould be forced upon the patient, if he is little inclined to it himſelf; for there is a great neceſſity of rouſing the body as well as the mind to exertion. It is remarkable how indifferent ſome perſons in this diſeaſe are, to every thing that is paſſing round them; they muſt even be forced to take food, or be in danger of periſhing with want.

The following caſe, with which Mr. M'Cormick of the Immortalité has obliged me, is an example of many that have come under my obſervation. Mr. M'Cormick, not without reaſon, thought it nearly allied to that complaint, which ſome phyſicians have called *angina pectoris*. The deſcription, as given to me, before ſeeing the man, by this intelligent ſurgeon ſatisfied me that it partook of the *hypochondriaſis Marina*, or *Noſtalgia Nautica*, common in the fleet. The firſt ſight of the patient convinced me. I began with my uſual queries of his private hiſtory, in a way that made him communicative. Something lay heavy on his ſpirits: the world had gone againſt him, and forced him from home; his father was dead ſince, and his mother not only afflicted but in great want. This was the ſtring on which hung all his woes. He ſpoke gratefully of Mr. M'Cormick's humanity: I aſſured him he ſhould go to the hoſpital, and that he ſhould be invalided and go home; and that he might even write immediately and tell his mother ſo. He brightened up ſo far as to ſay, that he believed

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he could get employment now in Dublin, as the times were mending in that country. A subsequent letter from Mr. M'Cormick informed me, "that since his going to the hospital he has recovered amazingly; although, I believe, wholly unaided by medicine; this I think perfectly confirms your opinion of its being hypochondriasis."

"Edward M'Guirk, aged about twenty-two, tall and able bodied, but rather thin than otherwise, bred a carpenter, compelled by want of employment to go to sea, this his first cruize. Complained, on the second of August 1800, of frequent cold chills, slight nausea, pain in his limbs, frequent and copious perspiration, pulse very frequent, although pretty full and regular. Conceiving his complaint to be a slight febrile affection, occasioned by irregularity, he had repeated doses of antimonial medicines, so as to produce full vomiting; and at night an opiate was added. August the third, general pain much relieved, complains of pain the whole extent of the right arm, and of want of power in the thumb, which is bent in towards the palm, but fixed there by no rigidity; says that for several weeks he has, at intervals, had a contraction in the flexor muscles of this arm. Frequent severe fits of palpitation, especially at night, attended with a sense of suffocation, which compel him to quit his bed; finds ease in a sitting posture, inclined forwards; pulse very frequent, bowels loose, appetite good.

"6th. Numbered his pulse, and found it 150; distinct and moderately full. 7th. Pulse 140;

" ſtarted twice out of his ſleep, to remove a preſ-
" ſure on his breaſt. Urine in ſmall quantity,
" great thirſt, copious and conſtant perſpiration.

" 8th. Pulſe 160. Uſually two or three at-
" tacks of palpitation in the day-time, at irregu-
" lar intervals; at night they are very frequent.
" 9th. Reſpiration not permanently affected, nor
" in any manner, during the daily paroxyſms.
" 10th. Pulſe 140. 14th. Pulſe 150; ſmaller
" and more irregular than heretofore. Thirſt,
" ſcarcity of urine, and copious perſpirations
" continue. Has hitherto taken no medicine
" that could affect the circulation; this day
" gave him gut. v. of the ſaturated tincture of
" digitalis, as prepared by Dr. Drake, in ℥i. of
" the infuſion of quaſſia, morning and evening,
" which on the 15th was increaſed to gut. x. twice
" a day; on the evening of this day pulſe was
" 120; irregular as to velocity, but ſtroke much
" more diſtinct than for ſome days paſt.

" 16th. Pulſe 140. Diſcharge of urine conſi-
" derably increaſed.

" 17th. Digitalis continued, and was gradually
" increaſed to gut. xviij. three times a day. When
" the doſe was at this point, the pulſe was uſually
" in the morning, previous to taking the tincture,
" from 120 to 140; at noon, when the effect of
" the morning's doſe was at its height, it was be-
" tween 70 and 80; in the evening it returned to
" its uſual velocity; urine became copious, palpi-
" tations much leſs frequent, but not leſs ſevere
" when they did occur; ſleep more compoſed.

" September 3d. About this time the pulſe
" became very irregular in velocity and force;
" the digitalis produced vertigo and univerſal
" tremor, and was ſeldom retained; palpitations,
" generally one in the day-time, and two or three

" at

" at night; he conſidered himſelf as becoming " rapidly well. Having no more digitalis, I was " neceſſarily reſtrained to abandon its uſe; I then " gave him the bark, and ammonia, with an oc- " caſional addition of opium or rhubarb, as the " ſtate of his bowels (which became very irregu- " lar) required. The paroxyſms became *gra-* " *dually* more frequent, and much more ſevere; " contraction in the arm, and (as he expreſſed it) " gnawing pain, permanent. A total inability " to lie on the right ſide, from the great ſenſe " of preſſure in that poſture. Reſpiration difficult " when in an horizontal poſition, on either ſide. " Pulſe continues irregular.

" October 16th. When he attempts to ſleep in " his hammock, an oppreſſion and ſtricture acroſs " his breaſt comes on ſo frequently, and with ſuch " violence, that, however drowſy, he ſeldom dares " lay down; the little he does ſleep, is either " lying on his breaſt, (upon which he is obliged " to turn himſelf when a paroxyſm comes on,) " or ſitting on his cheſt, leaning forwards on the " table. Theſe attacks never come on while per- " fectly awake; but his reſt is ſo imperfect as " ſcarcely to deſerve the appellation ſleep. Pulſe " as frequent as at any period of his illneſs, very " weak in general, although it communicates very " different ſenſations to the finger in a minute, as " to force and frequency; at one time being full " and regular, while the next ſecond it becomes a " rapid tumultuous motion rather than a diſtinct " ſtroke. About four o'clock (P. M.) a heat " (or rather a ſenſe of heat) commences about " the region of the heart, and, extending itſelf " upwards, diffuſing a glow over the neck and " face, continues until twelve, when he uſually " perſpires freely and is relieved; this ſenſation

" never

" never deſcends below the thorax. Feels a " pricking, as it were of a pin, in the vicinity " of the heart internally; it never ceaſes, nor " does it vary its ſeat.

" Oct. 26th. Palpitation never attacks him in pa- " roxyſms, as formerly; but when aſleep, an op- " preſſion ſeizes him, accompanied with a ſtricture " acroſs his breaſt, in ſuch a manner as to make him " fear inſtant diſſolution. When he does happen " to remain free from this attack, his dreams are " of the moſt horrid kind, making the idea of " ſleep dreadful to him; his bowels continue " irregular, as does his appetite for food. He is " much leſs emaciated than might be expected " from the length and nature of his illneſs; his " reſpiration becomes hurried on the ſmalleſt ex- " ertion, and he faints; his countenance is much " paler than before his illneſs, and has in it a cer- " tain expreſſion of diſtreſs, of which it is impoſ- " ſible to convey an idea by deſcription; his arm " continues contracted, painful, and the forearm " ſomewhat ſwelled; the thumb ſtill powerleſs."

The following caſe, by Mr. Lloyd of the Barfleur, ſo much reſembles others which I have lately examined, that I do not heſitate to claſs it under ſpaſmodic affection.

" Charles Aiket, belonging to the Armour- " er's crew, aged thirty-ſeven years, a ſmall man, " was put upon the ſick-liſt 14th February, with " pain about the præcordia. Spmptoms are, vio- " lent pains (as he deſcribes) about the heart; its " duration does not exceed five minutes, but the " attacks are frequent; his pulſe intermits un- " commonly from four to ſix ſtrokes as quick as " they could poſſibly be counted, then an entire

" ceſſation for two or three ſeconds. Upon mi-
" nutely feeling the arm for a conſiderable length
" of time, there was ſome little variation in the
" circulation; his appearance does not indicate
" diſeaſe; the ſtate of his bowels regular, and no
" loſs of appetite. He ſays that he has been ſub-
" ject to ſimilar attacks for ſix years; the laſt
" was about a year and half ago. Capt. opij gr. i.
" At ſeven P. M. the pulſe regular, and the at-
" tacks were not ſo ſevere. 15th, eight o'clock,
" A. M. a recurrence of the inequality of the
" pulſe, but ſlept well in the night. Upon further
" queſtioning him, he ſays that the pain is more
" violent when ſtooping, but it makes no differ-
" ence whether in a lying or erect poſture. ℞. opij.
" gr. ſs. ter die. One o'clock, P. M. pulſe regu-
" lar, and the attacks of pain have been ſlighter.
" 7. P. M. pulſe continue regular, and feels as
" well as uſual. 16th. continues well, having
" had a good night; no medicine. 17th, 18th,
" 19th. the ſame. 20th. went to duty.——I am
" apprehenſive that the periodical derangement in
" the circulation is the conſequence of either a
" polypus or aneuriſm near the heart."

MEDICINA NAUTICA.

SCURVY.

THERE is no part of my medical labours that has afforded me more ſatisfaction, than what relates to the prevention and cure of ſcurvy. A caſe of ſcurvy ſimply, requiring to be ſent to an hoſpital, has not come under my obſervation ſince 1795. The diſeaſe has, no doubt, appeared in numerous inſtances; but, the preſerved lemon-juice being now a part of the ſurgeon's ſtores, and regularly ſupplied when demanded, the certain relief is at hand. When I contraſt the preſent ſtate of the Channel fleet with what it was many years ago, even in my own early days of ſervice, there is much reaſon for exultation. It was no uncommon thing in thoſe times, for a ſhip, during an eight weeks cruize, to bury ten or twelve men in ſcurvy, and land fifty at an hoſpital. There was an inſtance laſt war, where ſo many were landed at Haſlar, on the fleet coming from ſea, that the hoſpital could not contain them; they were lodged in the chapel, and in tents erected for the purpoſe. Such was the inveteracy of the

diſeaſe on that occaſion, that many died in the boats between Spithead and the hoſpital; and in the hoſpital alſo many periſhed.

When I look over Lind's Work on Scurvy, it much aſtoniſhes me to think how he met with ſo many ſubjects for diſſection. The plain truth of the matter is, his method of cure was imperfect; for a man dying of ſcurvy is not known in the preſent day. It may be juſtly deemed a confirmation of a ſucceſsful practice, that nothing but the moſt unprincipled neglect will ever in future provide a ſcorbutic corpſe for diſſection.

In my former Volume, an inſtance is narrated of twenty men dying in ſcurvy on board an Eaſt-Indiaman, in the paſſage between India and the Cape of Good-Hope. When I think of the immenſe riches of that company of merchants, I am chilled with horror at reflecting on a fact that ſtains the commercial character with indelible diſgrace.

I am afraid that occurrences of this kind are very frequent in the ſhips of the Eaſt-India Company: Indeed the whole trading ſhips of this country require correction in this point. It is the nature of Trade to render man ſelfiſh; to chill the heart and narrow the affections. A commercial nation like this ought to have a Board of Health, to protect ſeamen in diſtant voyages, ſo conſtituted under legiſlative authority, that the power of gold could not abridge its benevolent ſpirit.

Much, however, as I depend on the citric acid for the cure of ſcurvy, I muſt ſtill aſſert, that the prevention ought to be truſted to eſculent vegetables, if they can be procured. In the warm climates, where theſe fruits grow, they may be uſed by the ſeamen with equal pleaſure and advantage in their native ſtate; but it is unnatural, in the

the winter months of our climate to give a man lemonade. This practice was introduced to the Channel fleet, in the ſummer of 1800: the ſcurvy, for the five preceding years, was little known, as the people had abundant ſupplies of vegetables on coming to port. But if it was determined that the ſhips ſhould not remain long enough in port to conſume the quantity of cabbage, onions, &c. to recruit their health, it was an eaſy matter to let them carry them to ſea; or when at ſea to ſend out regular ſupplies. This was done in the latter part of the ſummer of 1800; partially in the winter; but better attended to in 1801, when the ſupply was greater, and with it regular cargoes of bullocks ſent off Breſt.

From the whole of my reports from the ſurgeons of ſhips of the line, I do not find a ſingle fact that can juſtify the general uſe of lemon-juice as lately adminiſtered. As in all former cruizes, unleſs the ſupply of vegetables was frequent and large, caſes of ſcurvy I found ſtill appeared that required the acid in larger quantity from the ſurgeons. Indeed it is pretty certain that what was called lemon-juice in the victualling-office, was only acetous acid and lemon-juice mixed. The importation of lemons to this country muſt have been unequal to the expenditure in the navy only. But it is alſo probable that if the juice was unadulterated, it had been weakened and diluted by other means.

The long cruizes, and reſtleſs mode of duty in the fleet, in 1800, joined to the uſe of this cold and fat-conſuming beverage, had reduced the ſtrength and vigour of body in a wonderful manner in every ſhip. But the better-conducted ſupplies of beef and vegetables, which began in May 1801, reſtored the emaciated people, made

them equal to all the exigences of duty, and renewed the flush of health on their cheeks. These supplies were the more desirable, as an immense proportion of the whole had been debilitated by the typhous fevers which prevailed in the winter and spring months; fevers which weaken a constitution more than almost any other disease.—It is thus apparent, how imperfect many forms of service still remain, that relate to the subject of health: nothing yet is done by system.

In my former animadversions on scurvy, I pointed out the pressing necessity for supplying all transports with every preventive to ward off the disease, with a copious allowance of lemon-juice for cure. Large armies have been embarked at different times, during the war, yet these securities against a fatal disease are still little attended to. If we observe seamen accustomed to a sea-life so liable to suffer from scurvy, how much more ought we to guard against it among raw soldiers? A party of artillery, that formed part of the army of Sir James Pultney in 1800, was in the spring encamped on an island in Quiberon Bay, where the whole must have perished, but for lemon-juice sent from the men of war. The scurvy, after this, appeared, as might have been easily foreseen, throughout the whole army; which must have retarded its operations, and run great hazard in defeating the Egyptian enterprize.

In this Volume, in Mr. Perkins's report, we observe two symptoms are mentioned, which are new to the history of scurvy; viz. leucorrhœa and strangury in the women on board L'Uranie. The female, as being seldom at sea, has scarcely been the subject of this disease. The lax and debilitated solid might, no doubt, account for this change in the catamenia, but when the blood itself

itſelf is evidently altered in colour, from the abſtraction of oxygene, which imparts the florid complexion to the vital fluid, we can the leſs wonder at any alteration in the uterine effuſion.

Thus far the hiſtory of ſcurvy appears complete in what relates to the prevention and cure. But there was ſtill a *deſideratum*; ſome method of preſerving the citric acid was wanting, that to a certainty could enſure the antiſcorbutic power for any length of time, and in any climate. The juice we have ſeen, as preſerved for the navy, cure ſcurvy after being two years in bottle; this is very fair: but ſtill it is uncertain in that form for preſervation, as it is liable to fermentation. Due attention, I believe, has by no means been taken to give it even the beſt chance for keeping in this form. No caſe of lemon-juice comes to the fleet where there are not a number of bottles with the pulp and rind bruiſed down and mixed with the liquor. This, I ſuppoſe, is done by the contractor by way of making up the quantity as cheap as he can. But this very pulp, and mucilage which it contains, are what produce the fermentation that deſtroys the native acid. Beſides, the acid may be ſo diluted and weakened by the addition of pure water, ſo as very much to diſappoint us in the cure, unleſs exhibited in very large quantity. When mixed with acetous acid, I believe no chemical teſt can decide the ſophiſtication.

In the ſpring of 1800, I obſerved in the newſpaper an advertiſement by Mr. Coxwell, chemiſt, of Temple Bar, for a cryſtallized form of lemon-juice; and very ſoon after ſaw ſome of it in the poſſeſſion of Mr. Kittoe, purſer of his Majeſty's ſhip

Centaur; and which I conjectured to be prepared according to Scheele's method. I was therefore induced to write to Mr. Coxwell, and to inform him, that if he would ſend me ſome of his ſalt for experiment in the cure of ſcurvy, I ſhould take care to intruſt it to ſurgeons that were capable of exhibiting the medicine ſo as to appreciate its powers, that he might avail himſelf of my authority, ſhould it prove ſucceſsful. In the meantime, the honourable R. Admiral Berkley, whoſe heart is always expanded to give relief to a ſick ſailor, had intereſted himſelf in the buſineſs, and deſired Mr. Coxwell to forward to me a quantity of his preparation ſufficient for trial.

This form of the citric acid was firſt invented by Scheele, the late celebrated Swediſh chemiſt, and publiſhed in Crell's journals for 1784. He tried the proceſs which he had ſeveral years before diſcovered for purifying the acid of tartar, and obtained the acid of lemon, pure and concentrated. Mr. Coxwell had now the credit of preparing, on the largeſt ſcale, what had hitherto been confined to the laboratory of the chemiſt only.

At the very time that Mr. Coxwell's parcel came into my hands, the Superb, of 74 guns, arrived in Cawſand bay, uncommonly affected with ſcurvy. The firſt caſe that I inſpected ſeemed exactly fitted for the trial: He was, as Mr. Watherſton emphatically expreſſed, ſent by Providence for the purpoſe. Such an inveterate diſeaſe had not been ſeen in the fleet for years; the ſymptoms had advanced ſo rapidly as to approach the laſt ſtage; and, what was rather ſurpriſing, he had firſt ſought relief only about two hours before. I ſhall detail the caſe as related in Mr. Watherſton's diary, who, at my requeſt, noted the diet, that all circumſtances might

might be duly weighed in adjudging the merits of the concrete acid.

" Caſe of ſcurvy treated by the concrete citric
" acid. Superb, July 5th, 1800.

" Robert Brown, aged 21, ſeaman, labours un-
" der an advanced ſtage of ſcurvy, the principal
" ſymptoms of which are, ſpungy, livid, and ul-
" cerated gums, which bleed frequently; contrac-
" tions of both hams, but particularly of the right
" one, in which there is a conſiderable degree of
" rigidity, hardneſs, tumefaction, and livid diſco-
" loration, with a number of large blotches upon
" the leg; has uſed no medicine except *two ounces*
" of lemon-juice.

" Omitt. ſuc. lemon.

" ℞. ſal. concret. lemon ℥ ſſ.
" aq. com. ℥ viij. M.

" Sumat. ℥ viij. hodie.

" His diet to-day has been bargou for break-
" faſt; ſalt beef and pudding for dinner; bread,
" butter, and cheeſe for ſupper.

" July 6th. No bleeding from his gums ſince
" yeſterday; no other alteration to be perceived.

" ℥ vj. of the ſolution to day.

" Diet to-day; bargou for breakfaſt, ſalt pork
" and peaſe for dinner, bread and cheeſe for ſup-
" per.

" July 7th. Gums more florid; hardneſs and
" tumefaction of the ham ſomewhat receded. Med.
" as yeſterday.

" Diet; bargou for breakfaſt, ſalt pork and peaſe
" for dinner, bread and cheeſe for ſupper.

" July 8th. Gums begin to aſſume a fine florid
" appearance; they have not bled ſince he began
" the uſe of the ſalt, and are now beginning to ad-
" here again to the teeth. Tumefaction in the
" ham conſiderably reduced; dark livid colour al-
" moſt

" moſt gone; he appears to be in much better " ſpirits. Med. as before.

" Diet; bargou for breakfaſt; freſh beef and " ſoup, with vegetables in it, for dinner; drank " ſome tea in the afternoon; ſupper as before.

" July 9th. Knee more flexible, and all the " other ſymptoms continue to mend. Med. as " before.

" Diet; breakfaſt and ſupper as uſual; freſh " beef and ſoup for dinner.

" July 10th. A few ſmall ulcerated points re- " main about his gums, but which are clean and of " a healthy appearance. Med. u. a.

" Diet as before.

" July 11th. Symptoms diſappearing faſt. Med. " u. a.

" Diet as mentioned before.

" July 12th. Gums in a perfectly ſound ſtate; " rigidity of ham almoſt gone, which is ſtill a little " thickened, but without any diſcoloration, pain, " or even uneaſineſs; has regained his uſual " ſtrength, and ſays, that he is in as good health as " ever he was in his life, and fit for his duty as a " topman; to be convinced of which, I have juſt " ſeen him run to the main top-maſt head. He " takes his medicine for this day, and to go to his " duty to-morrow."

" REMARKS.

" The proportion of an ounce of the concrete " ſalt of lemon to a pint of water, as uſed in this " caſe, taſtes ſtronger of the citric acid than the " common lemon juice does; it is much more " agreeable and palatable, being without any of " that muſty taſte which the lemon juice always " acquires.

" On arriving in Cawſand-bay, this man had no " money; and, from all his meſſmates being in the

" ſame

" ſame ſtate of poverty, he has been totally de-
" prived of any aſſiſtance from fruit or vegetables,
" except what he might have eat with the ſhip's
" ſoup ſince the 8th inſtant. It will be obſerved,
" from the report of that day, what amendment
" had then taken place.

" Several of the ſcorbutics on board, with a
" milder diſeaſe, and who complained previous to
" this man, and who have regularly taken ſix ounces
" of lemon juice daily, continue now upon the ſick-
" liſt, and will remain for ſome days yet to come.
" Such appear to be the antiſcorbutic powers of the
" concrete ſalt of lemon!

" THOMAS WATHERSTON, *Surgeon, Superb.*"

If ever a caſe of ſcurvy was delivered in an unvarniſhed tale, it is the preſent one. I directed Mr. Watherſton to give eight ounces of the ſolution on the firſt day, and only ſix afterwards. When the diſeaſe is far advanced, as in this inſtance, there is a neceſſity of giving it a ſpeedy check at once, which has been my conſtant practice. The reſult is certainly equal to any thing I ever obſerved from the recent fruit; and I muſt remark, that thouſands of common caſes may be treated before a more deciſive trial could be made. For my own part, I was perfectly ſatisfied, and gave the Admiralty that aſſurance in tranſmitting the original caſe to Mr. Nepean.

At this time I was uſing my utmoſt endeavours to call the attention of the ruling powers to what I conſidered a valuable acquiſition to the naval department; and, with that view, ſent a jar of the acid to Lord St. Vincent, informing him thereby of my trial, and the ſatisfactory reſult. The admiralty, in conſequence, ordered other experiments to be made, by the direction of the Sick and Hurt Board.

It

It now appeared, that the ingenious chemiſt had, previous to all this, applied to the patronage of Earl Spencer for trials of his acid in the navy. That reſpected nobleman had given orders to that effect; but how were they obeyed? The concrete ſalt was ſent abroad to the Weſt Indies and the Cape of Good Hope, climates where the diſeaſe is little known, and where the fruit is indigenous. This was literally ſending coals to Newcaſtle; and ſo it fared with the concrete ſalt *.

The Honourable R. A. Berkley had alſo ordered a trial to be made on board the Saturn, one of the advanced ſquadron off Breſt, then under his command, where ſcurvy was frequent; and two caſes were ſelected by Mr. Perry; one of which took lemon juice, and the other the ſolution of concrete, of the ſame ſtandard. Mr. Perry thought the preference due to the lemon juice in the cure, but I could not help thinking, that there were peculiarities in the caſe of the man that took the concrete, whom I examined, that fully accounted for the difference. Mr. Perry, at my requeſt, tried another caſe with the cryſtals, and reports in the following terms.

" The marine James Freeman, who firſt com-
" plained of ſcurvy on the 11th of Auguſt, the
" day you viſited the Saturn, and for whoſe cure
" you gave me ſome of Coxwell's concrete acid,
" was perfectly cured on the 24th of Auguſt.

* But the lemon juice itſelf was even ſent in quantities to the Weſt Indies, till an officer of great conſideration called upon the ſurgeons of his ſquadron to know whether the juice ſent from England was better than what could be purchaſed on the ſpot for one twentieth of the price. If any man was to bring coals from Wales, to work the ſteam-engines at Newcaſtle, what would you think of ſuch a man?

" According

" According to your directions, I gave him eight " ounces of the ſolution for the two firſt days, and " ſix ounces a-day afterwards."

Mr. Lloyd of the Renown, the flag-ſhip of Sir John Warren, Bart. made ſeveral trials, and uniformly effected rapid cures, which made him ſpeak of the medicine with the utmoſt confidence.

Mr. R. Thompſon of the Childers, a zealous and able young ſurgeon, in September 1800, thus mentions the cryſtallized acid. "I beg leave to " obſerve, that I have made trial of the cryſtal- " lized lemon juice (during a ten weeks cruize) " you have been ſo condeſcending to recommend, " and I have the pleaſure to ſay, that I have found " it anſwer all the purpoſes of the freſh fruit."

Mr. Scott of the Ajax, an experienced ſurgeon, gives ſimilar evidence. Mr. Fleming of the Impetueux ſpeaks favourably of it, but had not ſufficient quantity to complete his cure.

On board the Doris, trials were made by Mr. Adamſon with what had been ſent to the Ville de Paris by the Commiſſioners of Sick and Hurt, as ordered, from my application, by the Lords Commiſſioners of Admiralty.

An equal number of patients, in ſymptoms nearly alike, were put on both acids for trial. For the three firſt days of their treatment, the whole had taken three oz. of lemon juice daily, beſides an oz. as made into lemonade, which was now ſerved by the purſer, ſo that they might be ſaid to have ſtarted tolerably fair. Mr. Adamſon's concluding remark is to the following effect. " According to the re- " ſult of my obſervation, the concrete is an effec- " tual and active remedy, and, I think, more cer- " tain and ſteady in its operation than the lemon " juice, which, however, has been efficacious, and " even ſpecific, in the cure of the few complaints

" that

" that have come under my obſervation. How " long the uſe of either may be continued without " injury to the ſtomach and digeſtive faculty, or " whether any injury will ever reſult from either, " and if ſo, which of them will ſooneſt prove pre- " judicial, are circumſtances deſerving inquiry, of " which, from want of experience, I cannot form " a juſt conception. I began the concrete in ſmall " doſes, both to obſerve its effects in that way, and " having only a ſmall quantity, with a proſpect of a " long continuance at ſea, I wiſhed to reſerve it " for more ſevere complaints, which I had reaſon " to expect in the ſequel of our cruize. The fa- " cility of preſerving Coxwell's concrete, and its " conveniency at ſea on account of bulk, are ad- " vantages obvious to every one. But I humbly " beg leave to obſerve, that, from its great reſem- " blance to ſugar, and other ſaline ſubſtances, it " appears as liable to adulteration as any prepara- " tion can well be conceived; and if conſiderable " quantities come to be demanded, preparations " of the ſame kind, from indigenous acid plants " or fruits may be ſubſtituted for that of lemon " juice. Its acidity is more concentrated than I " could conceive to ariſe from lemon juice, which, " with the aluminous taſte it poſſeſſes, may give " ſuſpicion of the preſence of vitriolic acid. It " effervesces more briſkly than lemon juice, with " ſalt of Tartar, and forms a tranſparent and ele- " gant neutral ſolution."

With reſpect to the danger of adulteration and ſpurious ſubſtitutes, there is nothing applies to the concrete that does not much more affect the purity of the liquid lemon juice. Vinegar, when mixed with the latter, cannot eaſily be detected by chemical reagents; and I ſuſpect the acetous acid is the preſent ſubſtitute, as being low in price. The only acid

acid that comes near the concrete, is dry acid of Tartar, but their elective attractions are very different, and they could eaſily be ſeparated and detected. With reſpect to the aluminous taſte, as mentioned by Mr. Adamſon, that is the ſame in all acids in a pure ſtate; even lemon juice itſelf, when finely treated, by ſeparating the dregs and mucilage, has this flavour. A bottle was brought to me by a ſurgeon, who ſuſpected that his whole ſtock had been mixed with ſulphuric acid, but, on trying it with muriate of barytes, no vitriolic acid was found. But had there been a ſpirit among us to receive into ſervice this elegant preparation, all theſe exceptions would have been ſoon overcome, by having it manufactured on government premiſes; and I went ſo far as to propoſe Mr. Coxwell's appointment to the Admiralty in defending that part of the ſubject.

Theſe are all the trials of the concrete that have come within my knowledge. Had the Admiralty conſigned a quantity of it to my direction, the buſineſs could not have reſted here. It was, however, too expenſive for the proſecution of a poor individual like myſelf, and I muſt be ſatisfied with what I have done. The moſt ſceptical will not doubt the evidence now produced in favour of this juſtly admired preparation: but it will be the taſk of a future generation to bring it from unmerited neglect into public benefit.* There is a ſingular difference between the ſupport given to this *legitimate offspring* of modern chemiſtry, and what was beſtowed on that *bantling* of falſe philoſophy, commonly ycleped *nitrous vapour*. Since my attend-

* For an account of the difficulties I had to encounter in obtaining regular ſupplies of lemon juice before its general inſtitution in 1795, ſee the firſt volume.

ance on the fleet, I have ſeen a number of printed works, diſtributed by the authority of Admiralty, on medical ſubjects, among the ſhips which I ſuppoſe came recommended from the phyſicians of the ſick and wounded; ſome of theſe did very little credit either to their authors or abettors, and I have ſeen them all glide away, "*nor leave a wreck behind.*" Many propoſals that have come from my pen have been adopted, and given general ſatisfaction; others, like the preſent, muſt wait the ſlow operation of time: to that, and the increaſing ſpirit of improvement in the navy, I freely reſign them.

From the immenſe ſtock of facts with which theſe volumes ſupply the hiſtory of ſcurvy, I do not find any reaſon to correct the early opinion which I formed of the theory of this curious diſeaſe. It has at leaſt been proved, that no ſpeculative notions have drawn us aſide from the beſt methods of prevention and cure. Our doctrine was founded on very ſimple and obvious facts. It had been proved by deciſive experiments, that the oxygenous portion of the atmoſphere gave to the vital fluid its florid and lively colour: and that, when this was deficient, the blood, in proportion to the defect of oxygene, varied in its hue to the darkeſt ſhade. It had alſo been proved by the greateſt chemical philoſophers, that oxygene was the acidyfying principle, as far as human knowledge had advanced; and thus the loſs of it in the blood might be reſtored by the citric acid, ſo effectual in the cure. Our theory, therefore, appears as clearly demonſtrated as it is poſſible, in reaſoning on the action of medicines as affecting the living body.

I muſt now take leave of a ſubject that firſt drew me into notice as a medical author. That work obtained

obtained me the unſolicited appointment of phyſician to the fleet, from an officer that I had never ſeen till the hour in which he was pleaſed to tell me of my promotion. The friendſhip and confidence with which I was honoured afterwards by that illuſtrious and virtuous character are the greateſt ornaments of my life. My ſtudies have therefore been highly favoured by Providence, if I have been at any time the humble agent in his hands of preſcribing comfort to a body of men ſo uſeful to their country as Britiſh ſeamen.

P. S. January 31. 1802.—Since finiſhing this article, I have been honoured with a letter of Admiralty, incloſing me copies of a letter from the Commiſſioners of Sick and Hurt Board, a certificate from the ſurgeon of the Cumberland at Jamaica, on the inefficacy of the concrete citric acid in ſcurvy, and a letter from the captain of that ſhip confirming the ſurgeon's certificate.

From the authorities given in the preceding pages of this article, I have concluded, that this preparation of the lemon preſerves entire the anti-ſcorbutic powers of the acid. I am always ready to alter my opinion when there is due reaſon; but this certificate comes in a very queſtionable ſhape, and tells for nothing, as a detail of the trials does not accompany it. Mr. Watherſton's caſe, from the collateral evidence which appears, I maintain to be worth a thouſand trials of this kind. But it is not of much importance to the ſubject whether the ſolid ſalt is equal to the recent fruit; its value muſt reſt upon curing the ſcurvy in any quantity however large, becauſe it is eaſily portable, and may keep for ages, and cannot be adulterated without means of detection.

On the whole, I informed the Lords Commiſſioners of Admiralty that I continued unſhaken in my opinion of the powers of the concrete acid. I regretted that the quantity ſent to the Channel was not hundred weights inſtead of pounds, as the frequency of ſcurvy in warm climates is ſmall when compared with the home ſeas; and I concluded by ſuggeſting to their Lordſhips a *due allowance* of this preparation of the lemon to ſhips going on diſcoveries.

The Commiſſioners, in their letter to the Admiralty, ſay, that they had not yet received a report of the concrete acid from the ſurgeons at the Cape of Good Hope. A paper was ſent to me ſix months ago, ſaid to be a copy of a report from a ſurgeon at the Cape to the Commiſſioners on the effects of the chryſtallized acid of lemons. As far as I could interpret the ſurgeon's meaning, it was *favourable*. I conſider it fortunate for the ſervice, on this buſineſs, as well as on many others, that in the Channel fleet inquiry has not been entered into with reluctance, or improvement followed up with indifference. The war is now over, and it may be a remote day before ſuch teſtimonies can be produced as may, in the opinion of ſome, be ſufficient to juſtify the ſupply of the new preparation to the navy; but thus far we are conſcious of having meant well. *

* A work was noticed in our former volume by Mr. Patterſon on the cure of ſcurvy by nitre and vinegar. Numberleſs trials have been made by different ſurgeons; but none that I can find could cure ſcurvy with this medicine. Mr. Bennet of the Excellent informs me, that, when he could do no better, he expended lbs. vij. of nitre, with a proportion of vinegar, not only without effecting a cure, but the diſeaſe was not even ſuſpended in its progreſs.

MEDICINA NAUTICA.

Mr. FLEMING's REMARKS.

EXTRACTS from Mr. FLEMING's *Journal on board l'Impetueux, Captain Sir E Pelew, Bart. off Rochford, from March till November* 1801.

The blockade of Rochford, in 1801, by a ſquadron of five ſail of the line, under that gallant and interpriſing officer, Sir E. Pellew, Bart. forms ſo prominent a part of the ſervice of the fleet in 1801, that it deſerves a diſtinguiſhed place in our volume. The Impetueux took her ſtation off Rochford early in April, and continued there till November; the other ſhips compoſing the ſquadron were occaſionally relieved.

MR. FLEMING's REMARKS.

" March. Gales of wind from the S. W. and " cold bleak weather during the greateſt part of " the month, which cauſed a number of catarrhs, " ſometimes attended with a conſiderable degree " of pyrexia, but not of any duration. One man " fell overboard in the late gales, and, before a " boat could be lowered down and brought on " board again, a full quarter of an hour elapſed, " during which time animation was ſuſpended. " However, by perſiſting in the plan pointed out

" for the recovery of drowned people, I happily " ſucceeded in reſtoring him to life.

" April. Moderate weather during the whole " of this month, except five days (from the 9th " to 13th). Not one man with fever, although " the Robuſt is very ſickly; the fever there appears " to be of the pneumonic typhoid kind. When- " ever the wind is weſterly, we are employed " traulling, and with great ſucceſs; ſometimes I " have known forty meſſes ſerved in one day, but " ſuch is accounted very lucky. One of our mizen- " top boys fell from the mizen-top head, and all " the injury he ſuſtained was only a luxation of the " ancle, and the end of the fibula fractured: he is " doing exceedingly well.

" May. This month we preſſed a number of men " from a cartel, one day from Nantz. A few days " afterwards, one of theſe people had all the ſymp- " toms of a real typhus, and remained for two days " in a comatoſe ſtate. This induced me to make " farther inquiry, and at laſt ſome of them in- " formed me that he had only recovered from a " jail-fever about a fortnight previous to his being " ſent on board the cartel. I had him removed " inſtantly from the ſick-berth, and apart from " the reſt of the ſhip's company; threw his bed- " ding and clothes overboard; had him well " waſhed, then ſpunged with vinegar; and, du- " ring the hot ſtage had recourſe to the cold " affuſion, not only to him but to moſt of the " others, when the fever was unaccompanied with " cough or oppreſſion about the breaſt, and evi- " dently with benefit. Only one perſon is at " preſent confined to bed from this fever. He is " now in a profuſe perſpiration; and I have no " doubt that towards evening he will be ſo far " convaleſcent as to begin the bark.

" I have

" I have no doubt that the fever was of an " infectious nature; and was communicated from " the young man taken out of the cartel, to the " twelve marked in the return. Every precaution " was obſerved to avoid the introduction of any " contagion. I was ſent on board the French " ſhip, and carefully inſpected the whole that " were taken to the different ſhips of the ſqua- " dron, all of whom were well cleaned and waſhed, " before they were allowed to mix with the other " people. But notwithſtanding theſe precautions, " one of them relapſed; and next day ten more " of our men were ſeized with fever. They " are now all convaleſcent except the one confined " to bed; no freſh complaints have appeared for " the laſt eight days, a proof that we have fortu- " nately ſucceeded in ſubduing the infection.— " Ulcers are now beginning to put on a vitiated " appearance, and difficult to heal; I preſume it " to be in conſequence of a ſcorbutic diatheſis " gaining ground faſt, as our people have had no " ſupply of vegetables ſince the ſhip left Caw- " ſand Bay, now about three months ago.—A " poor old man, aged ſeventy-one, an old ſervant " of his country, died on the 29th. He had been " aſthmatic for many years; a diarrhœa coming " on, carried him off in a fortnight, although he " had long complained of general debility, and " for which I wiſhed to invalid him: but he " objected ſo ſtrongly to that, by ſaying he muſt " ſtarve on ſhore, which induced Sir Edward to " keep him, rather as a penſioner than a working " man.

" June. Not a man has complained of fever " theſe three weeks; thoſe who had typhus ſix " weeks ago, are now returned to duty. I have " ſeldom obſerved ulcers put on ſo foul an ap-

" pearance (nine ulcers) in ſo ſhort a ſpace of " time: the ſlighteſt ſcratch degenerates into a " truly ſcorbutic fungous ulcer, in the courſe of " one day. Several of our people have been " ſeized with diarrhœa, which, I ſuſpect, proceeds " from the Iſle Dieu water, and which is both " muddy and ſtrongly impregnated with ſalt; but " no alarming ſymptoms accompanied any one of " them *.—I am exhibiting the nitrous acid to " one of my venereal patients †.

" July. The weather is now exceedingly fine, " and our people ſeem to enjoy a good ſtate of " health. Notwithſtanding, the ulcers continue " obſtinate; which clearly indicates a prevailing " ſcorbutic diſpoſition; and which is not to be " wondered at, when it is conſidered that our " people have only received *three days freſh beef* " *for five months paſt*. The ſupplies of fiſh have " alſo been more ſcanty, in conſequence of the " ſquadron being neceſſitated to lay at anchor in " Rochford, from the prevailing light eaſterly " winds which might favour the eſcape of the " enemy. The Serjeant of Marines is confined " to bed from contuſion; he expectorates blood, " and paſſes it alſo by the rectum.

" Auguſt. At no time during the cruize have " we had ſo few in the liſt (thirty-one for the " whole month,) as at preſent. The perſon with " phthiſis is now in the laſt ſtage; and ſo very " much reduced, that he is unable to walk with-

* This was a common complaint in all the ſhips which watered at that iſland; but it was convenient to the men of war compoſing the blockading ſquadron, being in ſight of the ſtation.

† Other ſurgeons, particularly Mr. M'Donald of the Montague, have recently tried this remedy without effect. When adminiſtered after mercury, it has, however, as formerly remarked, done good.

" out

" out assistance; every morning I expect to find " him a corpse. The digitalis was prescribed " in the form of tincture, as prepared by Dr. " M'Lean *; gradually increasing it to the num- " ber of twenty-eight drops three times a-day; " a greater always excited nausea, vertigo, stupor, " and distressing *deliquium animi*; clearly indicating " the impropriety of pushing the medicine to " greater lengths. What may appear singular, " though not the less true, is, that the pulse was " not arrested in the manner recorded by those " physicians, who have so ably detailed the vir- " tues and powers which this medicine possesses, " particularly its influence on the sanguiferous " system, and tubercular affections of the lungs. " The pulse was never under 108 strokes in a " minute for the last month: the hœmoptoe and " purulent expectoration continued undiminished, " and a leintery accompanied these distressing com- " plaints for three weeks, producing rapid emaci- " ation and extreme debility; from thence I infer, " that the mesenteric glands were diseased.

" Our success in traulling for fish being some- " times so considerable as to serve a number of " messes in a day, by which means a large allow- " ance of salted provisions have been saved, and " suggested the idea of laying the foundation of a " SICK MESS, similar to that of the Centaur, which " form you have so earnestly recommended " throughout the fleet. On our arrival in port " this saving will be accounted for by the Purser, " and converted into cash; which will enable us to " carry to sea an ample stock of those *good things* " which so speedily recruit the sea-worn patient.

* See *The Medical and Physical Journal for* 1800.

" September. Ulcers, that were ſo diſpoſed " to extend and be troubleſome, ſince the " late ſupplies of freſh beef and vegetables, al- " ready aſſume a moſt promiſing aſpect in this " ſhip and all of the ſquadron. Inflammations of " the eyes have been very frequent; particularly " when the wind is eaſterly, and when we are near " the ſhore, which is low and ſandy. If this has " been the cauſe, they have however not been very " permanent, but yielded to commonn reme- " dies."

On the preliminaries for peace being ſigned, the Impetueux returned to port, having been nine months abſent; a much longer time than has ever happened to any other ſhip cruizing in the home-ſeas, where ſeaſon and weather render frequent refitting neceſſary. From theſe fine practical remarks of Mr. Fleming we perceive, that even under the firſt diſcipline in ſervice, diſeaſe, though much retarded, muſt in the end be the fate of a long cruize. The ſhip's company had an ounce of lemon-juice and as much ſugar daily, according to the preſcription of Lord St. Vincent, as a preventive of ſcurvy; and Mr. Fleming tells us they took large quantities of fiſh; and, what was ſtill more in their favour, it was ſummer. Yet the ſcurvy appeared; and when it makes general progreſs in a ſhip's company, in proportion is muſcular debility induced: the mind flags, from ſympathy with the body; the ſpirit of courage and adventure is enervated, till, in the laſt ſtage, though the ſailor may ſtill be able to ſtagger about the deck, his heart fails, his ſtrength is exhauſted, even when he is plump in fleſh, and he dwindles into a phyſical coward, in deſpite of moral opinions. In ſuch ſituations of naval enterprize the

the value of prophylactic meaſures becomes conſpicuous. The medical officer is not only to aſſure his commander of a ſmall ſick-liſt, but he is to calculate upon the effective force of his men, that the power of muſcular action may be entire in the hour of battle. The money that at this time was ſpent on the adulterated lemon-juice, was more than equal to a moſt plentiful ſupply of freſh vegetables at ſea, which ought never to be withheld; and the lemon-juice ſhould be confined, at leaſt in cold climates, to the hands of the ſurgeon.

The facility with which the typhous infection, imported from the cartel veſſel, was ſubdued on board the Impetueux, adds another proof to our opinion, that perfect diſcipline is the certain ſafety againſt contagious diſeaſes; and whatever attracts the attention of the officer from that, is ſubſtituting quackery and deception for plain facts and obvious principles.

MEDICINA NAUTICA.

Mr. WOOD's REMARKS.

Mr. THOMAS WOOD * *of the Goliath on Nautical Medicine.*

" Sir, " Goliath, 3d Feb. 1799.
" Off Malta.

" I have juſt received your circular letter, and " regret much that I cannot have a converſation " with you on its contents. I have read the firſt " Volume of your Nautical Medicine, and have " found it a repoſitory of much uſeful matter; and " I am pleaſed in finding that its ſucceſs has en- " couraged you to go on in the compilation of a " ſecond. I am inclined to think that its novelty " will greatly promote its utility; for, as a new

* This valuable young ſurgeon, I am ſorry to record, died at Palermo in Sicily, a ſhort time after writing this letter, of a fever produced by extreme fatigue in the diſcharge of his profeſſional attendance. The naval ſervice of the country has ſuſtained a great loſs by the premature death of a man who poſſeſſed ſuch promiſing abilities; and this Volume might have been enriched by his future communications; which my readers will not fail to regret, from the ſpecimen here given of his talent for obſervation.

" book,

" book, it will be read with avidity by many who " would turn away with contempt from the plain " ſubſtantial precepts of Celſus, Sydenham, and " Boerhaave.—Your plan is an excellent one; " the navy is now very generally ſupplied with " ſkilful ſurgeons, or thoſe that wiſh to be ſo. " A collection of the opinions, the facts, and the " practice furniſhed by ſuch men, muſt be highly " intereſting to a judicious inveſtigator of medical " truth. If, from a collection of this kind, made by " four hundred ſurgeons, four or five uſeful apho- " riſms be eſtabliſhed, much will be gained for a " ſcience abounding with darknefs and conjecture. " From the communications furniſhed you, you " will, without doubt, find ſurgeons treating their " patients in a particular diſeaſe, ſome with one " remedy, ſome with another, and ſome with " none; and you will find the cures frequently " very equal in number. This will tend to " ſtagger people's prejudices in favour of particu- " lar noſtrums in medicine, and make them look " for the cure in ſomething elſe. Circumſtances of " ſhips and crews will be compared, and from theſe " the ſucceſs of different plans may be eſtimated. " But the natural judgment, the zeal and tender " attention of the ſurgeon, on which ſo much of " his ſucceſs depends, never can be committed to " paper. I might go on to a great length, uſe- " leſsly anticipating what I have no doubt will be " accompliſhed. I will therefore confine the re- " mainder of this letter to what is more imme- " diately your object. In this age of invention " and diſcovery, I am aſhamed to ſay, that though " I have not been idle, yet I have not been for- " tunate enough to invent any thing new to the " healing art; which, on conſideration, appeared " to me worthy to ſuperſede plans and remedies

" approved

" approved and ſanctioned by able men and long " experience. With reſpect to thoſe things men- " tioned in your letter, the following is my medi- " cal creed, and from it you may eaſily conjecture " my opinions on others.

" 1ſt. All ſudden changes of climate or ſea- " ſon are obviouſly dangerous. Hot weather is " healthier for the generality of people than cold; " and dry, than moiſt. Temperate climates and " ſeaſons are the healthieſt in general. Extremes " are dangerous. People coming from a cold to " a warm climate, require and bear moderate " evacuations; and people coming from a hot to " a cold climate, require moderate ſtimulants and " warm clothing. Changes of climate and ſeaſon " are among the moſt frequent and powerful cauſes " of diſeaſe; yet they do not always act immedi- " ately and palpably, requiring ſometimes a cau- " tious retroſpect to aſcertain them.

" 2dly. A light, dry, ſpongy, bubulous ſoil, " that quickly abſorbs humidity, is the healthieſt " to live near or upon.

" 3dly. Ships, houſes, or cities, placed where, " from circumſtances of climate or ſituation, the " air and weather are changeable, abounding with " cold or humidity, or loaded with animal or ve- " getable miaſmata, are to be conſidered naturally " unhealthy. People new or unaccuſtomed to " theſe places ſuffer moſt; and among theſe par- " ticularly, the ill-clothed and intemperate, people " loaded with blood, or conſtitutionally or caſu- " ally debilitated.

" 4thly. Water tainted or impregnated with " any extraneous ſubſtance that it may have ac- " quired in the air, in its bed, or in caſks, is " always rendered proportionably unwholeſome, " exerting upon the body the ſpecific effect of the

" ſubſtance which it contains. Its effects, how-
" ever, are generally too weak to fix the atten-
" tion, though the water on board a ſhip, from
" careleſſneſs in the filling, and its reſidence in
" caſks in the hold, does certainly tend to excite
" nauſea, indigeſtion, bowel complaints, and to
" ultimately haſten the acceſs of ſcurvy, and every
" ſpecies of putreſence.

" 5thly. Cold, crude, watery fruits, eaten to
" exceſs, bring on nauſea, indigeſtion, colic, and
" fever, with more or leſs of cholera. Theſe bad
" effects are more frequent in autumn or winter,
" and in people of cold inactive ſtomachs, and
" weak viſcera.

" 6thly. That clothing is beſt that in all
" climates and ſeaſons cheriſhes a comfortable
" warmth and moiſture on the ſurface of the
" body. Neglect in dreſs is particularly injurious
" to people of weak viſcera. A weakly, infirm,
" ill-clothed ſhip's company, will never be healthy
" in cold, wet, changeable weather; and under
" ſuch circumſtances the hoſpital and the grave
" will both have their ſhare.

" 7thly. That exerciſe or employment that
" keeps the mind lightly and cheerfully engaged,
" and the body moderately employed, is one of
" the greateſt preſervers of health. It is particu-
" larly neceſſary in cold and wet weather, and
" unhealthy ſituations. Fatigue of body, and too
" great application or diſtreſs of mind, are fre-
" quent and dangerous cauſes of diſeaſe.

" 8thly. The free introduction of atmoſpheric
" air, is one of the moſt uſeful and indiſpenſable
" means of clearing a ſhip from every ſpecies and
" variety of contagion. Every man contaminates
" the atmoſphere around him, more or leſs, with
" putrid effluvia ariſing from every point of his
" body;

" body; if this atmoſphere is not frequently re-
" moved or diluted by a new ſupply of pure
" atmoſpheric air, reſpiration muſt be impeded;
" the blood does not receive its invigorating,
" vivifying principle, and the animal juices and
" the ſolids gradually ſuffer in conſequence, ac-
" quiring a putrid diſpoſition, encouraging every
" ſpecies of ſcurvy, petechiæ, foul ulcer, &c. &c.
" one cannot expect to ſee the immediate effects
" of want of freſh air realiſed on board a ſhip, as
" in the black hole of Calcutta; but the Hôtel
" Dieu of Paris, I am told, ſtill affords an ex-
" ample. We are not yet ſufficiently *au fait* in
" the chemiſtry of contagious gaſſes to point out
" a gas to neutralize them; though, from the
" curious and unlooked-for diſcoveries that have
" been lately made in chemiſtry, and particulary
" pneumatology, it is not abſurd to expect it. Until
" that is aſcertained, the mode of ventilation that
" leaſt diſturbs reſpiration, and leaſt checks per-
" ſpiration, I believe, will be found the moſt
" ſalutary. Dampneſs and contaminated air are
" to be removed from a ſhip continually, and
" clear coal fires, placed judiciouſly throughout the
" ſhip, are the beſt ventilators in cold damp wea-
" ther. In dry weather the wind-ſails ſhould be
" always employed, attended by a weakly man,
" or a convaleſcent; and they ſhould be made
" larger than is cuſtomary. When a ſhip is
" ſickly, or at anchor, in hot weather, her broad-
" ſide, when allowable, ſhould be preſented to
" the wind.

" 9thly. An old weakly ſhip's company bears
" hot weather and moderate labour very well, but
" ſink faſt in cold weather and fatiguing duty.

" 10thly. I have not been in the Weſt Indies,
" and therefore I cannot ſay any thing on the
" yellow

" yellow fever from my own experience. I have " converſed with officers of all deſcriptions that " have been there, and I have remarked from their " accounts, that there was much timidity and per- " plexity in the treatment. I conſider all fevers in- " flammatory *in principio*, though they cannot be " all cured in ſame way. It is a queſtion with me " whether bark has any ſpecific antifebrile effect in " continued fever. Under my eye, in the greater " number of caſes when given during the fever or " before the criſis, it has diſordered the ſtomach, " increaſed febrile anxiety, checked appetite, and " often occaſioned a diarrhœa, which has acciden- " tally produced a criſis or termination of the diſ- " eaſe. Would not many other mawkiſh indigeſti- " ble powders, given in the ſame manner, and " with the ſame faith, produce the ſame effects? " In the fevers that I have had under my care in " this country, I have frequently bled after the " precepts of ſome of the old maſters, with unex- " pected ſucceſs, often curing the diſeaſe, as it " might be ſaid, by the firſt intention. But this " remedy requires more judgment in its exhibition " than ſaline mixtures or antimonial powder; for " where it does not immediately do good, it does " much harm, and is not eaſily remedied.

" I ſucceeded Mr. Burd in the Goliath, and I " am happy in obſerving that his elegant and for- " tunate operation has been reſcued from oblivion " by an inſertion into your valuable work.

" Full many a gem of pureſt ray ſerene,
" The dark unfathom'd gulphs of ocean bear." &c. &c.

" I have not until now heard of any new pecu- " liarity of ulcer that called for the public atten- " tion. I have ſeen the ulcers of ſome ſhips that " were called bad or malignant, but I was not clear-

" clear-ſighted enough to ſee any peculiarity in " them, or any difference from many that had fallen " under my own care, and were eaſily managed " when I treated them with moderation and pa- " tience. I look upon the greater part of what " has been called malignancy in ulcers, as well as " in moſt other diſeaſes, to depend principally on " the treatment of the ſurgeon. But ſomething " certainly muſt be allowed for peculiarity of con- " ſtitution, ſpecific diatheſis, and circumſtances of " the ſhip. An Italian epigram on a phyſician " begins with

" Io batterro da maligno
" Agni mal che non intendo."

" However, perhaps I am too light on ſo grave " a ſubject; but I am well aſſured, that many ulcers " that were pronounced ſpecifically malignant, on " changing their ſurgeon, and falling under the " hands of a man that did not torture them, *con* " *amore*, ſoon healed with common eaſy dreſſings, " I have an old and infirm ſhip's company under " my care, and they are particularly diſpoſed to " this marine phagedenic, yet they recover with " great eaſe, ſeldom requiring more than the ge- " neral treatment of inflammation, reſt, low diet, " anti-ſcorbutics, open belly, opiates, and mild " eaſy dreſſings to the ſore. Notwithſtanding the " beſt attention to diet and anti-ſcorbutics, there is " always more or leſs of a ſcorbutic diatheſis " in a ſhip's company, and wounds do not heal " quite ſo kindly as on ſhore; and, when the " wounds happen to be upon the legs or feet, they " are frequently expoſed to irritation from ſalt wa- " ter when waſhing decks, ſtriking againſt ropes, " walking about, &c. When theſe cauſes are cor- " rected or removed, a very ſimple treatment cures " them all: but if a ſurgeon receives an ulcer or

" wound

" wound in a ſtate of ſphacelus from high inflam-
" mation, and he thinks that there is ſome ſpecific
" poiſon in it, and trying to heap fuel to the flame
" by ſtimulating irritating dreſſings, as lemon-juice,
" ol. terebinth. &c. &c. then the inflammation
" will go on, and the ſore will throw off ſtrata of
" gangrenous ſlough, till the habit is weakened or
" the part loſes its high excitability, and then it
" gets well in ſpite of the ſurgeon. You may ob-
" ſerve, that on this head, as well as on moſt others,
" I have no novelty to propoſe ; I have heard both
" conſtitutional and topical ſpecifics propoſed for
" them, but I have ſeen them all fail in the hands of
" thoſe that were fondeſt of them : for my part, I
" hold it ridiculous and unſcientific to expect them
" when the diſeaſe originates from ſuch a variety
" of cauſes. I therefore, not only from reaſoning,
" but from experimental obſervation, conſider them
" all, lemon-juice, fixed air, gaſtric juice, &c. &c.
" as equally ineffectual or injurious. Boerhaave
" hoped for a ſpecific in ſmall-pox and hydrophobia
" becauſe they originated from ſpecific contagion ;
" but I believe he never thought of it in ulcers.
" If a ſhip or ſick-berth, from ſome peculiar cir-
" cumſtance ſhould be converted into a Hôtel Dieu,
" then what bolus, drop, gas, or plaiſter, will re-
" ſcue an ulcer from gangrene ?

" Sincerum eſt niſi vas, quodcunque infundis, aceſcit."

" The grand preventive of ſcurvy is animal and
" vegetable diet, freſh, juicy, and invigorating ; a
" temporate climate, good clothing, and chearful
" mind, are powerful prophylactics. When theſe
" cannot be had, and the diſeaſe has taken place,
" then lemons and oranges are as much a ſpecific
" in this diſeaſe, as mercury in the pox. I have per-
" uſed your book on ſcurvy ; I wiſh you could car-
" ry your chemical reſearches on the nature of

" ſcurvy and its correctors a little further. I ſhall " purchaſe Mrs. Melroe's book, as I think with " Celſus, that frequently " Cibus opportune datus " optimum medicamentum eſt." Clean, elegant " utenſils to eat and drink from, are alſo important " things in a ſick-berth. I have been fortunate " in ſerving in ſhips where the captain and officers " have always been humane and liberal in ſupplying " pleaſant refreſhments to a weakly convaleſcent; " and to this I muſt attribute the recovery of many " valuable individuals. I have obſerved, that no- " thing is ſo grateful and chearing to a ſick man as " this mark of concern and attention from his offi- " cers. I hope to have the pleaſure of ſpeaking " with you on theſe matters more at large.

" I am, Sir,

" with great reſpect and eſteem,

" your obedient ſervant,

" THOMAS WOOD."

MEDICINA NAUTICA.

Mr. WILSON ON FEVER.

An Account of a Fever, &c. in the Penelope, 1800. by Mr. NATHANIAL WILSON, *Surgeon.*

" DEAR SIR, H. M. Ship Penelope. off Malta. 15th June, 1800.

" BELIEVE me, it is not with an idea that any medical information which my obſervation and " experience have ſuggeſted, will, in the ſmalleſt, " aſſiſt you in the compilation of your preſent " work, that prompts me to offer them, but gratitude to you, who have been, ſince I had the " honour of being known to you, ſo ſincerely intereſted in my welfare, urges me to take this " method of retaining ſtill a place in your memory. " I ſincerely hoped the late change in the medical " department would have placed you in a ſituation " where you would have had ſtill a greater opportunity of diſplaying your well-known abilities,

" and of extending your beneficence towards our " corps: but I hope that is ſtill in reſerve, and will, " ere long, be verified. We ſailed for this coun- " try in September 1799; your being at ſea with " the fleet deprived me the pleaſure of ſeeing you " previous to our departure. Since our arrival in " this country, we have been pretty ſucceſsful; I " have to ſhare prize-money for eight merchant- " veſſels taken off Genoa, one Spaniſh corvette, " and Le Guilliaume Tell of 86 guns, which to " Captain Dixon's letter I refer you for particulars, " with regard to the ſhare the Penelope had in cap- " turing her. We have been employed in this " blockade now four months. There are in Val- " lette, which is the principal garriſon town in " Malta, and the only one in poſſeſſion of the " French, two 64 gun ſhips, and three frigates. " The reports relative to its ſurrendering, all along " have been ſo vague, that I cannot ſay when it is " likely to give in. We have a ſquadron here now " of two ſhips of the line, four frigates, and three " ſloops; the remainder of our force in this coun- " try are with Lord Keith at the blockade of " Genoa. Our force on ſhore conſiſts of 1000 " Britiſh, 5000 Sicilians, and 8000 Malteſe. French " in Vallette, agreeable to report, 4000. Oc- " tober 1ſt, we anchored in Gibraltar-bay, where " we found the Leviathan, R. Admiral Duck- " worth, Vanguard, and Powerful. On the fol- " lowing day Captain Blackwood attended a court- " martial on board the Vanguard, when our boats' " crews had communication with that ſhip's com- " pany, who, at that time, had a number of her " crew ill of fever. A few days afterwards ſeveral " of our people were taken ill, among whom were " two of the boats' crews who had been on board " the Vanguard. During the time we lay at Gib-

" raltar, Dr. Weir being then reſident at the hoſ-
" pital, allowed me an opportunity of converſing
" with him, and from him I received information
" of the Vanguard being ſickly, and left no man-
" ner of doubt with regard to the introduction of
" the diſeaſe on board us *.

" Having thus accounted for the origin of the
" diſtemper, I ſhall ſubmit to you, as far as my
" obſervation will allow me, a ſhort account of the
" ſymptoms and treatment. Our people, on be-
" ing firſt attacked, in general complained of
" pains of their back and head; nauſea; and
" ſometimes ſhivering; quick irregular pulſe; laſſi-
" tude; and total loſe of appetite; of a particular
" burning heat; tongue dry and parched. Having
" ſerved under Dr. Lind in the phyſical wards,
" Royal Hoſpital at Haſlar, where I had an oppor-
" tunity of ſeeing his practice ſucceſsful in a number
" of caſes marked with ſome of the above enumera-
" ted ſymptoms; and from which practice, with
" ſome variation, I was very ſucceſsful in the cure of
" fevers during a ſervitude of two years and a half in
" H. M. ſhip Brilliant in the Channel and on the
" north coaſt of America. I therefore naturally
" adopted the antimonial plan, but, under it, found
" my patients daily get worſe; pulſe never failing
" to increaſe its frequency, and, in ſhort, every
" ſymptom indicated the progreſs of the diſeaſe.
" My ſick-liſt now had increaſed to thirteen:
" finding there was no time to be loſt in the adop-
" tion of a different mode of treatment, and as
" every ſymptom indicated a ſurcharged ſyſtem, I
" at once determined on blood-letting. Imme-
" diately on their complaining, I took eight or ten

* The weather was exceſſively hot and ſultry.

" ounces of blood from them, and repeated it *pro*
" *re nata*; a few hours afterwards I gave a ℈i. pulv.
" ipecac. and at bed time, opii. gr. i. ff. and, in or-
" der to obviate the conſtant conſtipation of the
" bowels attendant on the diſeaſe, I ordered ſmall
" doſes of calomel and jalap to be taken frequently.
" In purſuing this method of cure, as many as were
" free from impeded reſpiration had a criſis in thirty
" hours from the commencement of the diſeaſe;
" few relapſed*. Thoſe who were afflicted with im-
" peded reſpiration and nauſea I bliſtered, and gave
" frequently ſmall doſes of the ſolut. antim. tart. and
" where ſo great a degree of debility remained as
" to render the adminiſtration of the bark and wine
" neceſſary, it always completed the cure. Out
" of nearly one hundred patients which I had la-
" bouring under this diſeaſe in the months of Octo-
" ber and November 1799 †, I did not loſe one,
" nor did I ſend one on ſhore. I am of opinion
" that this is a ſimilar diſeaſe to that which has
" lately proved ſo deſtructive to our forces in the
" Weſt Indies, but more mild, owing to the cli-
" mate not being ſo exceſſively hot, conſequently
" night-dews not ſo very heavy, although at this
" very period, you would, in remaining a quarter
" of an hour on deck after ſun-ſet, be perfectly
" wet, the night-dew is ſo heavy at this place.

" The cure of ulcers is particularly difficult in this
" country; I have, however, been fortunate in not
" having many, and thoſe I had, I have been able
" to get well by a ſimilar treatment to that prac-

* " Thoſe who had not a turn in thirty or forty hours from
" the commencement of their illneſs, turned yellow, and re-
" mained ſo for ſome time after their recovery."

† " At Palermo we were ſupplied with abundance of freſh
" beef and vegetables."

" tiſed

" tiſed on board the Charon in 1795, at which " time I was with you. Sixty or ſeventy of our " crew * have, in the courſe of a week, contracted " lues venerea. In the iſland of Sicily the only " obſervation I made on that diſeaſe was, that the " ulcers from buboes were more difficult of cure " in this country than any I had ever ſeen before. " The Northumberland off Malta, in the months " of February and March laſt, loſt a number of " her crew by fevers; alſo the 59th regiment of " foot, ſeveral officers, and a number of men, and, " what is remarkable, the 30th regiment, quartered " within a mile and a half of the 59th, ſcarce had " a man ſick in the regiment. The 59th were " quartered on marſhy ground. On the 30th " March laſt, the French ſhip Le Guilliaume Tell " was captured off this iſland. After ſhe ſtruck " there were found on board her 300 killed and " wounded; out of that number there were up- " wards of 30 capital operations, a number far be- " yond the power of a ſurgeon and his mate to at- " tend to †. Several who had their legs and arms " carried away, except a ſmall portion of ſkin by " which they were ſuſpended, remained in that " ſtate, without even the application of a tourni- " quet, for the ſpace of eight or ten hours, with- " out the leaſt hemorrhage of conſequence taking " place, two of whom I ſaw three days after they " were operated on doing well. This is a great " inducement for naval ſurgeons to defer capital

* " I have, within theſe laſt ſeven months, cured 80 con- " firmed caſes of lues venereas by the common method of " cure."

† " I had only one amputation in the Penelope. It did " well: it was an arm."

" operations until the action is over, in order to " have day-light to operate with.

" I have the honour to be, Sir,

" your obedient humble servant,

" NATHANIEL WILSON."

P. S. This accomplished young man died in the Mediterranean some time after the date of this letter. The publication of this fragment is the last tribute which friendship can confer on departed merit. T. T.

MEDICINA NAUTICA.

Mr. NEPECKER's REMARKS.

EXTRACTS from Mr. NEPECKER's *Journal on board the Orion, before and after the Battle of the Nile.* 1798.

" ON the eighth of May 1798, the Orion left " Gibraltar, in company with the Vanguard, " Alexander, and ſome ſmaller veſſels; the " number on the ſick liſt then was but ſmall, " and moſtly ſlight; thoſe incapable of duty " were, one from old and habitual ulcer, (the " man more than fifty,) and two accidents. On " the fourteenth we paſſed Minorca, and on the " ſeventeenth appeared off Toulon. During the " gale in which the Vanguard was diſmaſted on " the twenty-firſt, two or three additions were " made to the liſt from accidents; but none from " diſeaſe of conſequence. In the return of the " ſquadron from Alexandria to Syracuſe, from " June 29th to July 19th, the ſhip continued " perfectly healthy, with the exception of a few " pulmonic complaints, notwithſtanding the ex- " treme heavy dews that conſtantly fell whilſt

" passing the coast of Asia, and the south side " of Candia; they were, in my opinion, far " heavier than any I have seen either on the coast " of Africa or the West Indies, and but little " difference in the night or day. On the night " of August 1, 1798, five only were in the list, " and of them but one incapable of going to his " quarters; he had some days before suffered a " violent contusion, with a considerable wound " about the ancle and instep, his foot having been " caught in the main-brace when working ship. " On the sixth, whilst in the bay of Aboukir, two " cases of fever were received from the Peuple " Soverain, both of which soon recovered; a third, " sent from her on the sixteenth, proved speedily " fatal.

" It may not be improper to remark, that, con- " trary to the expectations I had formed, and " what the French officers and prisoners on board " the Orion told me, the majority of the wounds " received by our men in the action of August 1, " (and they were upwards of fifty,) healed as " soon, and with as little trouble, as I ever knew " in any climate. An amputation above the knee " was nearly well in three weeks; and the patient " on his crutches about the ship in less than four. " A severe wound on the shoulder, which began " close behind the clavicle, near its junction with " the processus acromion, and extending down the " back, had in its course destroyed the spine of " the scapula, was well on our arrival at Augusta " in Sicily on September fifteenth, notwithstand- " ing the patient had part of the time laboured " under flux; this, I believe, was general through- " out the squadron.

" With the prizes, and part of the squadron, " the Orion remained at Augusta, from Septem- " ber

" ber fifteenth to the twenty-firſt; during this
" time the different ſhips completed their water;
" the watering-place is in a low marſhy ground,
" between the hills and the town; the duty re-
" quired the men to ſleep on ſhore. Watering
" with expedition is always hard ſervice, and no
" care could perhaps prevent the men, during the
" night, from intemperance, where the means
" were ſo readily found. No material complaint,
" however, occurred till September twenty-ſeventh,
" when three men were ſeized with fever, and on
" the next day two more, ſhewing early appear-
" ance of danger; from that time till October
" tenth, fourteen were added to the number of
" thoſe *ſeriouſly* affected, beſides others whoſe com-
" plaints were ſlighter, and diſappeared by timely
" evacuations; of the three firſt ſeized two died,
" and one beſides. It is worthy of notice, that
" but few of thoſe who had been of the watering
" party eſcaped the fever in either a greater or
" leſs degree, whilſt, on the contrary, but one
" inſtance occurred of its attacking any other
" perſon, and that was one of the attendants on
" the ſick, who was ſeized with it on the tenth of
" October.

" I cannot but remark the ſimilarity of circum-
" ſtance mentioned by Sir R. Curtis, of the fever
" that broke out on board the Aſſiſtance in 1762,
" amongſt the men who had been on ſhore during
" the night on the ſame duty, at the African
" iſland St. Thomas, (who all fell victims to
" it,) whilſt not another man in the ſhip was
" affected *. By experience I know the duty of
" watering there in the day-time is not particu-

* *Vide* Medicina Nautica, Vol. I. Paper by Sir R. Curtis, Bart.

" larly

" larly dangerous. Is it not therefore probable " that fever would not have occurred in the Orion, " notwithſtanding the ſituation of the watering- " place, had not the men been under the neceſſi- " ty of remaining on ſhore during the night?

" On the fever breaking out in the ſhip, (the " remaining wounded occupying the ſick-berth,) " the gun-room was converted into an hoſpital, " and all communication cut off from the other " parts of the ſhip by means of a ſcreen and cen- " tinels. The weather during the whole of the " paſſage from Malta to Gibraltar, with the ex- " ception of two or three days, allowed the ports " to be kept up at pleaſure. Fires were placed " in the gun-room and over the ſhip, which was " repeatedly whitewaſhed, and the gun-room " ſteamed with vinegar; the clothes and bedding " of thoſe who died were buried with them; " and thoſe belonging to the convaleſcents well " cleaned and aired before they left the gun- " room.

" On the 19th of October the ſquadron an- " chored at Gibraltar, when the four men then " remaining in their hammocks were immediately " ſent on ſhore; three of them recovered and " returned to England ſome time after; the other, " I believe, died there.

" We were fortunate enough to have three " bullocks on board at the time of the action of " the Nile; and during the time of the whole " paſſage from Alexandria to Gibraltar, when our " ſhip's freſh proviſions were expended, I was " enabled to ſupply both our ſick and wounded " from the tables of Sir James Saumarez and the " ward-room.

" W. NEPECKER."

MEDICINA NAUTICA.

Mr. BRIGGES ON MEDITERRANEAN DISEASES.

REMARKS on the Diſeaſes of the Mediterranean, by Mr. JOHN BRIGGES *Surgeon of the Ajax.*

THE following remarks on dyſentery, fevers, ulcers, and the epidemic opthalmia that was ſo general in the navy and army employed in Egypt, make a valuable addition to our ſubject. Theſe were obligingly tranſmitted to me by the Honourable Captain Cochrane of the Ajax, an officer not more reſpected for his eminent profeſſional talents, than his love of improving medical arrangements, ſcience, and philoſophy.

" February 12th, 1802.

" The number of ſick on board his Majeſty's " ſhip Ajax has hitherto been very conſiderable, " occaſioned in part by a great proportion of her " crew not being much inured to warm climates, " and a peculiar dampneſs of the ſhip, in conſe- " quence of having been built with bad unſeaſoned " timber.

" I. Dy-

" I. Dysentery.

" The first and most inveterate of diseases, (the " dysentery), commenced at Port Mahon, in the " island of Minorca; but this I attributed chiefly " to the bad quality of the water of that place; " for, when lying there in the months of July and " August 1800 in his Majesty's ship Audacious, " I had undoubted proofs of it, as also observing " its effects on board several other ships; but, in " this last instance, it was far more violent in its " nature than I had ever before observed it, partly, " perhaps, from the causes before stated, and in " addition to that, having on board a detachment " of the 44th regiment, consequently the ambient " air must be more replete with the seeds of " disease.

" Some medical men are of opinion, that the in- " flammatory dysentery, which prevails so much " at Port Mahon, originates more from the insa- " lubrity of the air than its waters. However that " may be I cannot determine, but the many in- " stances I have known of ships, particularly trans- " ports, being there for a considerable time without " having on board the least symptom of the disease, " until reduced to the necessity of using those waters, " which seldom failed of producing the most obsti- " nate dysentery, inclines me to think differently.

" The usual methods of cure too often adopted " in inflammatory dysentery by emetics and other " evacuants, I have never yet seen productive of " any one good effect, but, on the contrary, often " do much mischief. Neither can I comprehend " how a disease originating in inflammation can be " alleviated by keeping the stomach and bowels in " a constant state of irritability by a tedious and use- " less perseverance in the administration of ipe- " cacuanha, rhubarb, calomel, enemas, &c

" I have

" I have uſually diſtinguiſhed the diſeaſes moſt " prevalent in the Mediterranean into four claſſes, " inflammatory and bilious dyſentery, inflamma- " tory and bilious fevers.

" In inflammatory dyſentery, the uſual ſymp- " toms of excruciating pains coming on about the " *regio umbilicalis*; frequent inclinations to ſtool; " ſometimes vomiting; but what I think proceeds " rather from ſympathetic affection than any " offending matter I ever obſerved in the ſto- " mach, and wherein I think the adminiſtration " of emetics would rather endanger the life of the " patient than alleviate his ſufferings; tenſion of " the abdomen; thirſt; a fulneſs and frequency of " the pulſe in proportion to the violence of the diſ- " eaſe; and laſt of all, a diſcharge of blood, &c. " by ſtool.

" In this complaint, my firſt ſtep was a plentiful " blood-letting, and repeated to the proportions " of twenty or thirty ounces every twelve hours, " until the violence of the diſeaſe relaxed, which " generally happened in the courſe of the third or " fourth evacuation. The tenſion of the abdomen " decreaſed; the extreme pains ſubſided by the " ſecond or third day; a diarrhœa frequently ſuc- " ceeded, which, with the uſe of weak lubricating " drinks, ſeldom failed of performing a perfect " cure about the ſixth or ſeventh day; but in caſes " where the diarrhœa continued ſo as to occaſion " any conſiderable degree of debility, a few power- " ful doſes of tincture of opium ſucceeded in the " completion of it.

" By this mode of treatment, I have never failed " of conquering the firſt attack of this diſeaſe, and " only from repeated relapſes have I ever loſt a " ſingle patient, or few have I known to die of this

" malady

" malady that did not, in ſome degree, fall the ſa-
" crifice of their own indiſcretion.

" The bilious dyſentery generally comes on
" with the ſame violent ſpaſmodic pains of the
" bowels; frequent inclinations to ſtool, without
" any relief; the patient complains of great heat
" and thirſt, with a peculiar dryneſs of the ſkin,
" which feels more parched and dry than in the in-
" flammatory dyſentery. The pulſe is not ſo full,
" but more frequent, and, as in the bilious fever,
" great proſtration of ſtrength. The diſcharge of
" blood by ſtool ſeldom commences before the
" third day, (which, in inflammatory dyſentery,
" often comes on with the firſt ſymptoms,) and is
" frequently preceded by ſmall diſcharges of a bi-
" lious matter.

" This is a diſeaſe with which people are often
" afflicted on firſt coming into the Mediterranean,
" and requires a different treatment from the in-
" flammatory dyſentery; for, unleſs it be obviated
" by evacuants, (emetics, cathartics of calomel,
" &c.) it often terminates in very obſtinate and
" dangerous conſequences. In this alſo where the
" heat is conſiderable, bleeding becomes indiſpen-
" ſibly neceſſary, for I have always ſeen it produc-
" tive of the happieſt effects.

" The uſe of flannel, ſo much ſpoken of by Dr.
" White, is no doubt a grand auxiliary in the cure
" of dyſentery or diarrhœa, and what I have ſeen
" productive of much good in every caſe wherein
" it was applied. The ſort I generally made uſe of
" conſiſted of common ſhip's blanketting: a ſtrip
" is paſſed three or four times round the loins or
" abdomen, extending from the pubes to the ſter-
" num, moderately tight, and retained on until the
" patient was well. However it is by no means
" either a new or unuſual preventive in many

" parts

" parts of the Mediterranean, particularly at the " iſland of Malta, where, inſtead of flannel, they " uſe a thick warm belt of cotton, paſſing it ſeveral " times round the body. Taught its utility by " long experience, no labouring men are without " them, being conſidered as the almoſt never-fail- " ing antidote of dyſentery and lumbago.

" II. ULCERS.

" The violence of this diſeaſe had ſcarcely ſub- " ſided, when another, if poſſible, more perplex- " ing, manifeſted itſelf among a great many of the " ſhip's company. Theſe were ulcers of a moſt " inveterate nature, which from the ſlighteſt wound " often extended itſelf in a few days to the bone.

" In many inſtances, their firſt appearance was " made by a ſmall puſtule containing a limpid fluid, " in others, by pain, hardneſs of the limb or part " affected, and inflammation. Theſe I treated " for a long time ſimply as ſcorbutic ulcers, but " am now of opinion they proceed from other " cauſes, for perſons afflicted with them ſeldom " had attacks of any other diſeaſe, which induces " me to think that they originate rather from an " effort of nature to throw off ſome noxious mat- " ter lurking in the ſyſtem than merely what is " called ſcorbutic habit.

" Another circumſtance which confirms me " more in this idea is, that moſt of thoſe ulcers " commencing with a ſmall puſtule, and the fluid " contained therein being of a yellow tinge, al- " ways undergo a ſenſible change on the adminiſ- " tration of emetics; for, in moſt of theſe caſes, the " ſtomach has been very foul, the patient always " diſcharging a great deal of bilious matter.

" Emetics I have always found more effectual " than any other evacuants in theſe caſes, and ge-

" nerally obſerved, that the wounds ſooner exhi-
" bited a healthy appearance, and the diſcharge
" aſſumed a better colour than from the operation
" of cathartics; whereas, on the contrary, if omit-
" ted, the patient often loſes his ſtrength and ap-
" petite; he becomes emaciated; his ſkin partakes
" of a yellowiſh tinge, the wound grows worſe every
" day; violent pain and inflammation ſucceed, ex-
" tending itſelf with incredible rapidity, which ſoon
" terminates the life of the patient; for in caſes
" of theſe very extenſive ſores of this nature that
" may ultimately terminate ſo as to admit of ampu-
" tation, debility is ſo very conſiderable, that the
" patient, in all probability, never can recover.

" But it often happens, that neither medicine nor
" topical applications ſeem to have any influence
" in ſtopping the progreſs of theſe ſores for the
" firſt five or ſix days. Diſcutient waſhes, and ca-
" taplaſms, repeated blood-lettings, evacuations
" by cathartics and emetics, a plentiful uſe of vegeta-
" ble acids, with nothing but a farinaceous and ve-
" getable diet, do, in ſome caſes, appear to me
" to mitigate their violence before the fifth,
" ſixth, or ſeventh days. While many of thoſe
" which I left almoſt to nature, with the aſſiſtance
" only of keeping the bowels in a laxative ſtate,
" preceded in general by an emetic, as before
" mentioned; emollient cataplaſms, prohibiting
" the uſe of wine or ſpirituous liquors, and ſubſti-
" tuting vegetable acidulated drinks, were often
" ſooner reſtored than thoſe ſubjected to a
" more rigid diſcipline. Though the inflammation
" extended, in ſome inſtances, beyond the limits ex-
" pected, for, in the firſt mode of treatment, the
" debility occaſioned by it impeded the cure, while
" in the other, the granulations were more luxu-
" riant, diſcharge in general better, and cicatrization
" rapid.

" Imme-

" Immediately on the appearance of theſe or " any other ſores, I reſtricted the patient to fa- " rinaceous and vegetable diet, allowing no kind of " animal food, and wine only in particular circum- " ſtances, ſubſtituting vegetable acids, ſugar, &c.

" In the convaleſcent ſtate I have uſually allowed " ſuch proportions of freſh proviſions as the ſitua- " tion would admit of, with a liberal uſe of bark " in the vegetable acids, with ſugar, wine, opium, " &c. which plan, conſidering the great number I " have had committed to my care, the many pri- " vations they ſuffered, and in a climate by no " means favourable to their recovery, I have pur- " ſued with much ſucceſs.

" III. Fevers.

" *Ardent and bilious fevers* are diſeaſes common " to all warm climates, and ſo well known that " any further deſcription of them would be ſuper- " fluous, and the methods of cure too ſimple for " any medical man to err in; nevertheleſs when " the proper means are not embraced in the earlier " ſtages of this diſeaſe, they ſeldom fail to procraſ- " tinate much the patient's recovery. However " nature ſo clearly preſcribes what ought to be done, " that ſuch miſtakes cannot often happen.

" Complaints of the lungs of the moſt obſtinate " nature, often ſucceed inflammatory fevers, if not " obviated in its commencement by large and re- " peated bleedings, until every ſymptom of inflam- " mation mitigates. And the bilious fevers, when " the ſtomach and bowels are not freed immediate- " ly of their noxious contents by evacuants, eme- " tics, colomel, purges, &c. the proſtration of " ſtrength brought on by long neglected ſufferings, " ſoon reduces the unfortunate patient to ſuch a " ſtate of debility that no medical aid can again " reſtore.

" Many medical men, on firſt coming into this " country, apprehend that bleeding in inflamma- " tory fevers may be productive of bad conſe- " quences by too much debilitating the patient in a " clime ſo different to their own. But in my " opinion, that very increaſe of heat renders blood- " letting more neceſſary and copious, as the in- " flammatory ſtate will be naturally augmented. " Indeed I cannot help thinking, that many of thoſe " pulmonic affections which prove ſo obſtinate in " the Mediterranean might often be prevented by " a bolder practice in their commencement; for " I conceive that a free and early uſe of the lancet to " immediately remove the cauſe of the patient's " ſufferings, carries with it a leſs probability of " producing bad effects than truſting to the uncer- " tain aid of antimonials, nitre, &c. a mode that " muſt require a much longer period to produce " any effect at all, and ſeems a very likely way to " produce the very evil they ſo much wiſh to avoid.

" IV. Opthalmia.

" The next diſeaſe, and which merits much the " attention of the medical department in this coun- " try, is the opthalmia, a complaint from which " the army of Egypt has ſo much ſuffered.

" In the month of September 1801, it, for the " firſt time, made its appearance on board the " Ajax, then at anchor in Aboukir-bay. I at firſt " purſued the uſual methods adopted in the army " for its cure, ſuch as bliſtering, bleeding, repeat- " ed cathartics, &c. but I have never obſerved " this plan to ſucceed better than leſs violent re- " medies. Bliſters no doubt give a temporary eaſe, " and to effect that purpoſe, it is neceſſary they " ſhould be placed as near to the ſeat of the diſeaſe as " poſſible. But the extreme pain and inflammation

" which

" which often occurs in irritable habits after blifters,
" have defeated all the good that can be expected
" from them; not only terminating often in trou-
" blefome fores, but I have feen them often in-
" creafe the inflammation and turgidity of the vef-
" fels of the eye; therefore, except in fome very
" violent cafes, I have never troubled the patient
" with blifters.

" From blood-letting I have not been able to
" diftinguifh any good effect, neither do I conceive
" it at all neceffary: even topically, I never could
" obferve it to produce that relief which might
" be expected from it.

" This is a difeafe particularly peculiar to
" Egypt, and the many pretended caufes I have
" heard affigned for it, are nothing more than
" opinions ill-founded. Some adduce that it pro-
" ceeds from nitrous exhalations of the foil: if that
" be the cafe, I cannot comprehend how fhips
" cruizing in thofe feas, having no communication
" with the fhore, fhould have their crews afflicted
" with opthalmia in fo violent a degree, when the
" wind blows conftantly from the northward and
" weftward at the very period this complaint is
" moft prevalent, confequently the exhalations of
" a fouthern fhore cannot affect people cruizing
" perhaps fifty or fixty leagues to the northward of
" it. Others have aflerted, that fmall particles of
" fand conftantly floating in the air are the principal
" caufe; but this, for the fame objections affigned,
" cannot exift.

" I muft confefs I have not had many opportu-
" nities of feeing any of thofe cafes through their
" different ftages on fhore. However, from the
" few obfervations I have been able to collect, I
" conceive the real caufes to be fo remote, that no
" very fatisfactory reafon (at leaft any I have heard

" of) has yet been aſſigned for it. Perhaps ſuch " a diſcovery might lead to methods of cure more " eaſy, although the preſent one ſeems very ſimple " and very rarely fails of ſucceſs.

" The only opinion I have to offer is, that the " diſeaſe is endemical and periodical, which laſt cir- " cumſtance ſeems to deny the poſſibility of its be- " ing occaſioned by irritation from ſand or exhala- " tions of the earth, for theſe being cauſes that al- " ways exiſt, I ſhould think, for the ſame reaſon, " that people would, at all times, be equally ſubject " to the opthalmia, which is known not to be the " caſe. Moreover it is epidemical, for I have ſeen " it in many inſtances produced by communication, " often affecting whole meſſes of ſix or eight per- " ſons, who, perhaps, from not taking the precau- " tion of cleanſing their hands after waſhing and " touching their eyes, have, by uſing the vehicles " their meſſmates might have occaſion for, thus " communicated the diſeaſe to them alſo; for if " one only be affected, paſſing the diſcharge into " the other eye in the earlier ſtage of the diſeaſe, " it will ſoon produce it in that alſo.

" But, as I have before obſerved, the methods " of cure are very ſimple, except in very violent " caſes and bad habits, and any thing more than a " weak ſolution of ext. ſaturni. with a particular " attention to cleanlineſs and keeping from lights, " is unneceſſary. Some find great relief from a " conſtant application of cold water; others more " from ſea-water than freſh; but that depends on " circumſtances, not being always the caſe, its " effect varying much in different ſubjects: the " bowels ſhould be kept in a laxative ſtate, (for " that purpoſe I prefer the *natron vitriolatum*,) " avoiding wine or ſpirituous liquors for ſix or eight " days, when the inflammation generally begins " to ſubſide. So ſoon as this happened, I uſually

" had

" had recourſe to ſome ſtimulus to aſſiſt the veſſels
" in the re-abſorption of extravaſated blood on
" the *tunica adnata*, which proved very tedious
" without, for which purpoſe I have always uſed
" the tinct. opii, introducing a drop twice a day;
" from this the patient, after its firſt effect, always
" experienced a ſenſible relief for hours after its in-
" troduction, and thus the cure was in general
" completed in twelve or fourteen days.

" In many inſtances I have ſeen them much more
" obſtinate, attended with violent and dangerous
" relapſes, but theſe I impute more to the indiſ-
" cretion of the patient than any other cauſe; for,
" in the convaleſcent ſtate, the expoſition of the
" eyes to a ſtrong light, or the patient falling into
" any of thoſe exceſſes to which ſeamen, &c. are
" addicted, frequently bring on very obſtinate
" relapſes. In theſe caſes only have I ever ob-
" ſerved bliſters to be uſeful, or, indeed, of any ſer-
" vice whatever.

" I believe there are few diſeaſes with which
" mankind are afflicted, wherein he ſuffers greater
" torture than during the paroxyſms of opthalmia
" in its bad ſtate. The periods of its coming on
" are about the hours of ſun-ſet and riſe, and con-
" tinues with the moſt excruciating pains until mid-
" night; it then begins to abate, but recommences
" with the riſing ſun, and laſts until mid-day, and
" ſometimes has no remiſſion, continuing in this
" ſtate from three to twenty days, if not obviated
" by ſome very powerful ſedative. From the uſe of
" opium (which plan I did not adopt till of late)
" I have invariably obſerved the happieſt effect
" from being given in doſes of 60 to 100 drops,
" (depending on circumſtances,) about half an
" hour preceding the paroxyſm; but I have often
" given it after the coming on of the fit with nearly
" equal ſucceſs; and never ſince I diſcovered its

" utility have I omitted it in violent caſes. It has " frequently happened, that after the ſecond or " third time of taking it, (when given in ſufficient " proportions,) that the paroxyſm has not re- " turned at all, though the attack had apparently " been of the moſt violent nature.

" Of one hundred and thirty bad caſes I have had " under my care, one man only loſt the ſight of one " eye, in conſequence of a relapſe, and a very bad " habit of body beſide, and of ſlight caſes as almoſt " many more, all of which are perfectly recovered.

" It is with much pleaſure, Sir, I comply with " your requeſt in this account of the few preceding " obſervations made on diſeaſes moſt prevalent in " the Mediterranean. They are all I have to " offer; and theſe were only committed to paper " merely to aſſiſt my memory, therefore they will " not appear in that order they ought, had they " been intended for other inſpection.

" But ſhould Doctor Trotter find among theſe " any remark worthy his attention, it will afford " me an additional gratification. I am, Sir,

" With the greateſt reſpect,

" Your very obedient ſervant,

" JOHN BRIGGES."

" *The Honourable* ALEXANDER COCHRANE.

" Spithead, February 8th, 1801. H. M. Ajax."

It is probable from this account of OPTHALMIA, that the cauſes producing it are chiefly to be referred to variations of ſeaſon, which depend on changes of temperature, juſt as we have obſerved the ſame diſeaſe in the Channel. The ſenſation of a rough body raſping the eye-lids, which is a very common attendant, occaſioned by the turgid veſſels of the *adnata*, might give the idea to the patient of ſand producing the effect. But changes of temperature in the atmoſphere certainly better explain this, as well as the appearance of other inflammatory affections.—T. T.

MEDICINA NAUTICA.

SICK-BERTH.

THE apartments of the ſick, before the preſent war, were very imperfect; and it was not till my appointment to the Channel fleet, that any regular plan was adopted. Some rivalſhip has been exerted ſince that time; and they have now attained the laſt degree of convenience. This ſubject, I ſuppoſe, in former wars, was like moſt others that related to health in the navy; it excited little attention, and none of the preceding writers make the leaſt mention of a commodious ſpot being ſet apart for the ſick. In the firſt ſhip where I was Surgeon's Mate, I remember a ſick-berth, half-incloſed with hammocks, being fixed near the galley; more with a view to ſtifle contagion with the ſmoke from the fire, than to keep the patient comfortable. Lind's doctrine of fumigations was then in its full vigour, to which our Captain, like all others, bowed with ſubmiſſion. If, however, infection, by this means, was roaſted to a cinder, the poor ſick man was often in danger of loſing his eyes from the wood-ſmoke in undergoing

undergoing this fiery ordeal. Lind took it into his head that the ſituation of the fire-place in ſmall veſſels, between decks, by affording copious ſupplies of ſmoke, was the true cauſe of theſe ſhips being more exempt from infectious diſeaſes than large ones. This notion has been, with many others, copied implicitly by a later writer; but is much eaſier reſolved by attributing it to a ſmaller number of men, where fewer raw land-men are admitted; to a more perfect ventilation, as there are fewer decks, and the motion of a ſmall ſhip being more conſtant, which tends to agitate the body of air within it, and thus more frequently receives a freſh current, while the foul air is thrown out. I therefore contend, that the atmoſphere in a ſmall veſſel is more pure than in a large one; which will account for the ſuperior healthfulneſs of the crew. By the ſame mode of reaſoning, the ſmall ſhip is leſs troubled with ſcurvy, which is daily exemplified: nay, it is obſerved, that the officer and ſeaman in the frigate and ſloop, retain at ſea much longer that ruddy complexion which indicates an exemption from a ſcorbutic diſpoſition. Nothing in our practice is better certified than this. The purer atmoſphere thus ſuſtaining the excitement in a healthful degree, the vital principle preſerves full vigour, and eſcapes typhoid fever; the ſcorbutic tendency is alſo oppoſed by the more oxygenated quality of the air, which would be otherwiſe exhauſted by a ſea-diet.

For the preſent improved ſick-berth the navy is indebted to Captain Markham of the Centaur. In a former Volume of this Work *, that officer's attention to the ſick-bed is noticed in terms of high

* Vol. I.

com-

commendation. It well became a gentleman educated under the religious roof of the worthy Archbiſhop of York, to feel for a brave man in the ſeaſon of diſeaſe. Under the article of Diet for the Sick, I have detailed the numerous and ſubſtantial articles of comfort which he eſtabliſhed in the Centaur; and under his direction the ſick-berth was furniſhed in a ſtyle of delicacy and comfort, much beyond any ward in our Royal Hoſpitals.

I had been in the practice of recommending the model of the Centaur's ſick-berth, for a length of time, to ſurgeons and officers; but when Lord St. Vincent took the command of the fleet, not more than four ſhips had followed my advice; ſo difficult it is to effect improvements.

The MARKHAM SICK-BERTH takes in the two foremoſt guns under the fore-caſtle, all that ſpace from the ſhip's ſide to the fore-maſt, ſo that it includes the round-houſe and head-door, and alſo the midſhips, which was formerly occupied by a pig-ſtye. The head-door is converted into a ſaſh-window, and occaſionally into venetian blinds. Over the midſhips is a large ſky-light, which gives a cheerful appearance to the whole; and in warm weather is thrown open, ſo as to cauſe a freſh current of air to paſs through the ports and head-window. The walls of the ſick-berth are either pannels of deal, or ſtrong canvas, ſo cloſely put together as to exclude the ſmoke from the galley fire; and nicely whitewaſhed once a month. The furniture conſiſts of commodious benches, and a ſettee for the weakly people to recline upon. Tubs and pales for waſhing, cooking veſſels with towels and clean canvas table-cloths, diſhes, ſpoons, knives and forks, &c. complete the utenſils,

utenſils, all of which are kept in fine order, in concealed lockers within the ſick-berth. A canvas cot or two, with hoſpital bedding, neatly ſurrounded with clean white callico curtains, are kept for fractures or particular ſurgical caſes. The utmoſt attention is paid to cleanlineſs and purity, which is eaſily done, as the round-houſe is often waſhed. In cold or damp weather a hanging-ſtove, with clear embers, is brought in, and alſo when the deck is ſcrubbed.

The ſpace between the head-doors, and under the ſky-light, is uſed as a diſpenſary, and elegantly fitted, with a deſk; and along the head are ranged the drawers and bottles for preſent uſe; in a ſtyle of neatneſs that would do credit to the firſt apothecary's ſhop in London.

We have always inculcated the practice of ſeeing and examining every perſon in the liſt in day-light; and a ſick-berth thus conſtructed makes it more convenient. It is of much conſequence in particular diſeaſes, ſuch as the acceſſion of typhus to ſee the countenance by day-light; the very caſt of the eye and hue of the face are leading characteriſtics of early infection. In ſurgical caſes, ſuch as wounds and ſores, it is alſo of the firſt importance to view them in a clear manner, for the treatment ſo much depends on the appearance and colour of the matter and ſurface of the ulcer. All theſe advantages are now obtained in the higheſt degree; and I truſt ſervice will never again relapſe into the ſlovenly habit of dreſſing or examining the ſick in a cockpit. A ſeaman who is careleſs of his perſon cannot conceal his ſloth in this ſpacious and ſhining apartment, and it prompts every one to perſonal delicacy, which is the firſt virtue in all hoſpital arrangements.

A ſick-

A ſick-berth of theſe dimenſions, in the larger claſs of ſeventy-fours, gives room ſufficient for twenty-two people to hang up their beds, with full advantage to attendance and purification. It can ſeldom happen in a ſhip duly regulated, that more ſpace can be wanted, as a convaleſcent temporary berth can be eaſily erected on the oppoſite ſide. An effectual check can thus be given to the firſt ſymptom of infection, and its progreſs arreſted in the beginning.

After Earl St. Vincent aſſumed the command in the Channel, his Lordſhip gave orders for the removal of pig-ſtyes from that part of the ſhip which, in Captain Markham's plan, is converted into a neat commodious diſpenſary. The improvement was however but partially adopted, and it was not till the very end of the war, that the Admiralty gave orders for all ſick-berths to be fitted agreeable to the new form by the dock-yard joiners. I recommended Mr. Cairns of the Hercule to addreſs a letter to Captain Luke on this ſubject, which that officer, with his uſual goodneſs of heart forwarded to Mr. Secretary Nepean: Captain MARKHAM was now a Lord of Admiralty, and this eſſential point of ſervice was thus accompliſhed.

To this Article I have the pleaſure of adding a draught of the MARKHAM'S SICK-BERTH, which Mr. Marſhall, builder, of Plymouth-Yard, obligingly furniſhed for me, by ſending one of the draftſmen in his department to Cawſand Bay for that purpoſe. It is taken from the Mars, the flag-ſhip of Rear Admiral Thornbrough: Captain Lloyd, in the conſtruction of this berth, gave every joiner in the Mars to the diſpoſal of Mr. Peter Blair the ſurgeon, till it was fitted in the firſt ſtyle for elegance and accommodation. The decks

decks of the Mars, at this time, perhaps exhibited, above and below, the fineſt appearance of any ſhip in the Britiſh Navy. Captain Lloyd had even been at the expence and trouble to paint all his *lower deckers* white, which gave the cheerful look of a drawing-room to a battery of thirty-two pounders.

MEDICINA NAUTICA.

DIET FOR THE SICK.

IMPROVEMENTS in the medical department of the navy have been more difficult to effect, and more ſlow in their progreſs, than in other branches of the ſervice. In one view this may appear ſtrange; as it might be expected that men in power, who are anſwerable to their Sovereign and country for their meaſures, would be glad to patronize every thing that could ſecure health; for without it a fleet or an army are nothing. Another circumſtance, one would believe, to awaken their condeſcenſion ſtill more is, that they ſometimes become ſick themſelves, which ought to make them feel for others. Nevertheleſs the ſubject is too much neglected; it is with a cabinet of Miniſters as it is with individuals, the value of health is never conſidered till it is loſt.

The knowledge of medicine may be ſaid to be inſulated; it is in a great meaſure confined to thoſe who practiſe it as a profeſſion for a livelihood. You will meet with men of the firſt talents and endowments, who excel in philoſophy, literature,

and the fine arts, who have never devoted a ſingle hour to the ſtudy of their own frame, its form and movements in health, or the changes which theſe undergo by diſeaſe. The ſubject of ſickneſs therefore, becauſe it is painful to think about, ceaſes to be thought of at all; and if it did not give bread to a part of the community, it is probable that the whole of mankind would fall into the grave without a ſingle doſe of phyſic. It ſeems indeed a fortunate circumſtance for that portion of human beings who paſs a great part of their days in poverty and affliction, that a certain claſs of men ſupport themſelves by adventuring to cure diſeaſes. The numerous charities which abound in theſe kingdoms, owe much of their inſtitutions to phyſicians. The man of feeling and principle, who is witneſs to ſo much wretchedneſs, cannot fail to impreſs ſome of his acquaintance, with his converſation; and if he can only perſuade them to go and look at what he deſcribes, the work of benevolence is more than half done.

Theſe reflections naturally ariſe from my preſent ſubject. The repreſentations which have been made on the diet of the ſick berth, and the frequent mention of it in my writings, as well as in my official intercourſe with officers and ſurgeons, have greatly contributed to improve it. Indeed this department was little attended to in former times; and preceding writers on the diſeaſes of ſeamen had almoſt thought it beneath their notice. This was common to the ſhip and the Royal Hoſpital; a ſtriking inſtance of which appears in my firſt Volume; where a Captain of a man of war came to viſit a number of men at Plymouth hoſpital, that had been ſent on ſhore very ill of ſcurvy. Upon inquiry he found that they were allowed *no vegetables*, and was told by ſome of the attendants

attendants that none could be got. Aſtoniſhed at ſuch treatment he went to the market-place and bought a large aſſortment, and ſent them to his people.

In my ſecond Volume was given a letter from a female correſpondent, Mrs. Melroe, who was an author on cookery in dear times; in which is detailed a method of preparing ſoup, that is eaſily practiſed at ſea; and which was recommended to the attention of the navy Surgeon. My recommendation, however, did not make that impreſſion I wiſhed: without the authority of command little is to be done in this way. This induſtrious lady addreſſed ſome of the inferior Public Boards, with a view to get her cookery introduced into the navy; and I have been told that ſhe walked the pavement round Somerſet-houſe, till the ſhoes were almoſt worn from her feet, in hopes of at leaſt obtaining the ſale of her book. Alas! inconſiderate female! to offer cheap diſhes to the rich ſons of office, in Somerſet Place; were ever time and talents ſo miſapplied! Change thy theory; go to the ſhop of Burgeſs, where you will find the eſſence of twenty fat hogs, (food for a pariſh!) concentrated into as many quarts of ſauce; take that, mix it by thy culinary powers; and thou ſhalt be ſoon rewarded; ſuit it to the palate of Quin, and Handel, and thy books will ſell: but let thy ſuet-broth, and Colonel Paynter's ſoup remain for half pay naval lieutenants, maſters, phyſicians, and ſurgeons *!

Amidſt a few teſtimonies in favour of Melroe broth, I ſhall ſelect only the following, from Dr. Whyte of the Atlas, and Mr. Farquhar of the

* The receipt for Colonel Painter's ſoup is copied from a Newſpaper into Mrs. Melroe's Book on Cheap Living. *Longman and Rees, Paternoſter-Row, London.*

Captain. It has at all times been much more grateful for me to liſten to a ſurgeon's catalogue of dietetic comforts in his ſick-berth, which in theſe quarters are the ſoul of recovery, than all the faſtidious parade of bolus and mixture, which are ſerved up *ſecundum artem*. Dr. Whyte ſays, "On "reading in your ſecond volume an account of "Mrs. Melroe's ſuet-ſoup, I had immediately a "ſmall quantity prepared. Although neither "onions nor leek-ſeed could be procured, I have "the ſatisfaction of informing you, that it was pret-"ty generally reliſhed. It is not equal to freſh "beef-ſoup, but preferable, in my opinion, to any "meſs that can be made of ſalted meat. In con-"ſequence, I had a kettleful boiled every day for "my patients during the greater part of our late "cruize.

"If good diſhes be proper for the ſick, and if "this be one, that is not only in itſelf good, but "cheap, palatable, and eaſily prepared, the very "few ingredients neceſſary to compoſe it might "ſurely be ſupplied by government; and I flatter "myſelf, on your repreſentation, the noble Lord "at the head of the Admiralty, who has on all oc-"caſions ſhown himſelf ſo attentive to the health "of ſeamen, will, by allowing ſuet, &c. for this "purpoſe, give anadditional token of his wiſdom "and philanthrophy.—Atlas, Cawſand-bay, June "1799."

Mr. Farquhar of the Captain, during a long winter cruize in 1800, alſo found this meſs highly ſerviceable. "I believe," ſays he, "I have already men-"tioned to you that I had found Mrs. Melroe's "ſoup, recommended by you in the ſecond volume "of your Medicina Nautica, to anſwer extremely "well; it makes a very comfortable and palatable "meſs,

" meſs, and is much better liked by the ſeamen " than the portable ſoup as it is commonly uſed."

Captain MARKHAM'S *Sick Meſs.*

Captain Markham of H. M. S. Centaur, having for a length of time directed the ſick-berth of this ſhip to be furniſhed with freſh meat, vegetables, fruit, ſoft bread, porter, cyder, &c. by a plan deviſed by himſelf, without coſting government a ſhilling, I muſt now detail his method, in hopes that every captain and ſurgeon will follow an example ſo worthy of imitation. I cannot recommend this plan in a better manner than by preſenting a copy of my public letter to the Admiralty on this intereſting ſubject, written with a view to obtain the patronage of their Lordſhips, as the beſt and moſt certain means to make it general.

" SIR, May 8th, 1800. Cawſand-bay.

" Having at different times, in the courſe of my " attendance on the fleet, repreſented to their " Lordſhips the very great advantages which the " ſick of the different ſhips at ſea would derive " from the uſe of freſh meat, a better wine, porter, " vegetables, and fruits in ſeaſon, it has hitherto " happened, that the method of obtaining this ſup- " ply has been objectionable; and conſequently, " it was only followed up for a ſhort time. But " having ſtill kept this object in view, and the " wants of the fleet having been greater for the " laſt two years than at any period during my ſer- " vice, I have now to requeſt the attention of their " Lordſhips to a plan which has been already prac- " tiſed in a ſingle ſhip, and which, by meeting

" with the countenance of their Lordſhips, could " not fail to become general throughout the navy, " to the uncalculable benefit of the ſick-bed, and to " the public ſervice.

" The plan is to eſtabliſh a meſs for the ſick, by " the conſent of each ſhip's company, which is to " be done from the ſalted proviſions, &c. which " the ſick are unable to uſe when indiſpoſed, and " confined to the ſick-berth. There are numerous " diſeaſes, when it is either improper for the pa- " tient to uſe the ſhip's diet, or when, from want " of appetite, he diſlikes it. A large allowance " therefore goes to his meſſmates, which, if not " devoured by them, has often been ſold on ſhore " to diſadvantage. Now inſtead of this ſuper- " abundant allowance being given to a man whoſe " appetite rejects it, or to his meſſmates, who may " ſell it for bad purpoſes, Captain Markham of the " Centaur has been long in the habit of directing " the purſer to keep a book of credit for all ſuch " proviſions, from a liſt daily furniſhed by the ſur- " geon, which credit goes to the uſe of the ſick, " and is converted into a fund for ſupplying live " ſtock, whether ſheep or poultry, porter, vegeta- " bles, fruit, &c. when the ſhip goes to ſea; from " this alſo new bread is daily baked for the uſe of " the whole*.

" The ſhip's company of the Centaur have moſt " cordially entered into this benevolent meaſure " of their Captain, and have juſtly made it their " boaſt. My laſt communication from Mr. Wil- " les, ſurgeon of the Centaur, mentions the meſs " fund at 70l. credit, which will ſupply the ave-

* The fund of a meſs, well ſupported and encouraged in moſt ſhips, would even afford to keep a cow for the uſe of the ſick, which would certainly be the firſt and greateſt comfort that could be beſtowed.

" rage

" rage number of ſick for twelve months, at a " moſt liberal allowance. The preſent ſtock at " ſea conſiſts of five prime wethers, twelve dozen " of London porter and cyder, lemons and oranges, " vegetables, pickles, eggs, &c.

" Their Lordſhips may form ſome idea of the " good to be expected from this plan being made " general from the following example. When Cap- " tain Buller, in the ſickly condition of the Edgar " laſt February, gave up his private ſtock to the " ſick and convaleſcents from the prevailing fever, " it was remarked, that in the ſpace of ten or four- " teen days, the moſt debilitated caſes were able " to return to their duty. Upwards of fifty re- " covered at ſea in this manner, being the firſt and " worſt, and under all the diſadvantages of bad " weather.

" When the Edgar came to port, ſhe landed in " all about 150 other caſes; and after theſe had " been from ſix to ten weeks at an hoſpital, only " eighteen were returned to the ſhip. Many of " the number were invalided, ſome of whom were " afterwards ſeized by Captain Buller, whom he " found in good health. Such are the defections " of a ſhip's company when, from deficient com- " fort on board, they are ſent on ſhore.

" The plan of a ſick meſs, ſuch as I have pro- " poſed in imitation of Captain Markham, muſt " go a great way in preventing ſuch misfortunes as " are the conſequence of ſending men to hoſpitals. " It interferes with no forms of office connected " with any of the inferior boards, but leaves the " people entirely in the management of their offi- " cers, a circumſtance I conſider much in its favour. " At the ſame time I am of opinion, that it could " not be eaſily brought into general practice with- " out the approbation and countenance of their " Lordſhips. If a ſick man can be done juſtice to

" in his own ſhip, he certainly ought never tobe
" ſent out of her: but no article in the *materia me-*
" *dica* can make up for the want of freſh pro-
" viſions.

" In our humble endeavours to be uſeful, we
" have always had in view the value of eſtabliſhing
" good precedents as a legacy to our ſucceſſors.
" The preſent, I think, is one of them. The moſt
" expenſive articles which cookery can deviſe,
" become ſmall in point of coſt if they can return
" a ſick man to his ſhip, rather than allow him to
" remain a ſingle hour at an hoſpital. A few diſ-
" abled ſhips, with men at hoſpitals, ſubtract ſo
" much effective force from a fleet, as might, on
" ſome occaſions, decide the fate of a battle."

" To Evan Nepean, Esq."

Mr. Nepean acknowledged this letter, and that he had communicated its contents to their Lordſhips.

To Lord St. Vincent, who had juſt aſſumed the command of the Channel ſquadron, I alſo recommended this form of a ſick meſs, but no diſpoſition was manifeſted to aſſiſt in its completion. The laſt office of neglected repreſentation is to record a good precedent for the benefit of poſterity, which moſt willingly I do.

A book containing the quantity of the different articles purchaſed for the uſe of the ſick meſs, with the expenditure daily, is kept regular. The ſheep, and all living ſtock, ſuch as fowls, are under the direction of the captain's ſteward; the vegetables, eggs, &c. under the ſurgeon. Every thing is bought of the beſt quality. When any man is put upon the ſick-liſt, requiring a diet which the ſhip cannot ſupply, he is put upon the ſick meſs, ſupplied with freſh proviſions, his flour is made into hot

hot rolls for tea, and his other provisions go to the credit of the sick mess. This credit is paid by the purser into the hands of the Captain, who is treasurer.

Some trifling sums of prize-money, too small for distribution, laid the first foundation for this charitable institution in the Centaur. I am happy to add, that a similar mess has been adopted in the Princess Royal, the flag-ship of Sir E. Gower, and in the Impetueux, commanded by Sir E. Pellew. In the Princess Royal the sum of thirty pounds was found on the decks which nobody would claim, and was devoted to this purpose; at the same time the ship's company readily acquiesced in establishing this plan of a sick mess.

Nov. 1801. To these ships I have now the pleasure to add the Orion, Captain Reynolds. Mr. T. Galloway, mate of the Centaur, was acting as surgeon, and strongly inculcated the fine example of his own ship. The officers contributed their mite, and all the crew entered into the measure. The Courageux, Captain Sotheby, by the exertions of Mr. Clifford, followed up a similar sick mess. These ships were of Sir Edward Pellew's squadron, and were no doubt much encouraged by the example of the gallant Commodore. The arrangement of a medicine chest, and a pompous *formula medicamentorum* are trash, compared with these comforts to a sea life!

Some future æra of naval service may perhaps see this institution honoured with Admiralty protection. In the meantime it deserves my encomium, as being best suited to the design of any thing that has ever come under my observation. The name of Markham will long be remembered with gratitude and affection in the navy for this invention, to comfort the bed of affliction, and to restore the

weak and languid convaleſcent to vigour and health *. *Sic Deus providebit!*

The following method of making ſoup at ſea is one of the moſt economical inventions I have ever ſeen: it reſembles the quality of Mrs. Melroe's, and ſhows to what neceſſity, amidſt all our national ſplendour, an induſtrious navy ſurgeon is drove to find nouriſhment and comfort for his people when convaleſcent.

"An inſtance has occurred to me of procuring "a ſalutary and pleaſant beverage for patients at "ſea; that is, to preſerve all the large marrow-"bones on board when freſh beef is uſed in har-"bour, putting them into a digeſter to ſeparate "the oily matter, which can be preſerved by ſpices "any length of time. A ſmall portion of it, with "a little barley or rice, and vegetables, boiled in "water, makes a moſt pleaſant ſoup, which I have "found patients to reliſh exceedingly, preferring "it much to the portable broth ſupplied to the "navy.

"WILLIAM BELL, *Surgeon*."

Megæra,
28th July, 1800.

A ſea life affords the ſtrongeſt evidence to be found of mankind living for a length of time on a particular diet, without change, ſometimes for years

* This generous officer, when he left the Centaur, on his appointment to the Admiralty, gave twenty dozen of fine London porter, with other articles, as a preſent to the ſick-berth.

together,

together, without either the appetite failing or the ſtomach rejecting it. I apprehend this is chiefly owing to the ſtimulus of the muriate of ſoda which preſerves the beef and pork, and ſeems ſo grateful to the human ſtomach. Freſh beef and freſh pork are ſoon diſliked, and produce nauſea. I have more than once at ſea been ſick with the uſe of freſh pork, turtle, and poultry. Mr. Pritchard, a maſter in the navy, mentions an inſtance where the purſer gave two fowls, each weighing three pounds, for a piece of beef. Theſe were much reliſhed at firſt, but were ſoon diſliked by the ſeamen, who returned with pleaſure to their ſalt meat. He alſo remembers when the late Lord Rodney ordered freſh pork to be ſupplied in 1769, of which the ſeamen ſoon tired, and refuſed to eat it. Captain Tregent of the marines relates the ſame of turtles uſed in King's ſhips, and ſimilar effects have been obſerved by other officers. The crew of the *Ville de Paris* had ſo much freſh beef off Uſhant laſt ſummer, that they longed to be put upon ſalted proviſions.

MEDICINA NAUTICA.

NAUSEA MARINA, SEA-SICKNESS.

THE diſeaſe uſually called ſea-ſickneſs, as it has ſeldom been fatal, ſeems to have little engaged the attention of the naval phyſician or ſurgeon. But as it is a very painful affection while it laſts, and tends to pave the way for other diſeaſes, I have given it a place in this Volume.

Sea-ſickneſs may be defined, a vertigo accompanied with nauſea and vomiting, great liſtleſſneſs of mind, and inaptitude to muſcular exertion, for the moſt part occaſioned by the motion of the ſhip.

The firſt ſenſations of its approach are, a ſlight quiver, or degree of tremor, and dizzineſs, with rather indiſtinct viſion, that makes the patient rub his eyes as if ſomething there had produced this effect; a very tranſient confuſion of thought, as if from ſudden alarm alſo is felt, and a kind of anxiety or ſighing, not unlike what we perceive on going into a deep river, when the buoyancy of the water appears to raiſe us from the bottom.

Nauſea

Nauſea and vomiting often ſucceed theſe feelings; but ſometimes the former continues without any effort to evacuate the contents of the ſtomach. As the vertigo increaſes the patient is in danger of falling on the deck, and catches the firſt poſt that he can lay hold of, and lies down. The horizontal poſture he finds to alleviate his ſufferings, and if he attempts to walk the giddineſs and nauſea return.

In ſome ſubjects, particularly in females, the vertigo is followed by ſuch anxiety as to occaſion ſyncope: the patient will frequently remain for ſome time in a ſtate of inſenſibility. I have never ſeen or heard of convulſions from ſea-ſickneſs.

The free evacuation of the ſtomach by vomiting, can ſcarcely be ſaid to give a reſpite to the diſeaſe, for the nauſea and other painful feelings ſtill remain; and all deſire for food is ſuppreſſed, till debility and emaciation are the conſequence of want of nouriſhment. The pulſe is generally low, and leſs frequent than in health.

The moſt ſevere caſe of ſea-ſickneſs which ever came under my obſervation, was that of Mr. Berkenhout, a midſhipman of the Vengeance in 1793, ſon of the late reſpected phyſician and philoſopher. In a paſſage to and from the Weſt Indies, he was almoſt a conſtant ſufferer. At one time he was ſo reduced, that I deſpaired of his recovery, and he had frequent ſyncope; even in the fineſt weather he was affected more or leſs by the motion of the ſhip. This young gentleman, an only child, for whoſe welfare the affectionate father expreſſed ſuch ſtrong attachment and concern, in his admired letters on education, died, after I left the Vengeance, of the yellow fever, in another voyage to the Weſt Indies. The prayer

of

of old Evander ſeems to have been exemplified in the fate of Dr. Berkenhout and his ſon :

At vos a ! Superi, et Divûm tu maxime rector
Et patrias audite preces ; ſi numina veſtra
Incolumem Pallanta mihi, ſi fata reſervant,
Si viſurus eum vivum, et venturus in unum ;
Vitam oro : patiar quemvis durare laborem.
Sin aliquem infandum caſum, fortuna minaris ;
Nunc ! ô nunc ! liceat crudelem abrumpere vitam
Dum curæ ambiguæ, dum ſpes incerta futuri ;
Dum te, care puer, mea ſera et ſola voluptas,
Complexu teneo ; gravior ne nuncius aures
Vulneret.———— VIRG.

Some peculiar prediſpoſition of body, it would appear, renders certain perſons more liable than others to nauſea marina. As far as my obſervations go, I think this conſiſts in an irritable ſtate of the nervous ſyſtem, and where the ſtomach and inteſtines are eaſily affected from ſlight cauſes. The gouty conſtitution is of this kind ; all thoſe perſons who are uſually ſaid to be nervous, habits ſubject to dyſpepſia and ſpaſmodic affections of the ſtomach and bowels ; hence the fair ſex, in making a paſſage or ſea-voyage, are more frequent ſufferers than men.

The duration of the diſeaſe, therefore, depends much upon the ſtate of prediſpoſition, as in ſome conſtitutions it is quickly got the better of, while in others it is permanent, or recurs from trifling cauſes.

I have known men who have been bred to a ſea-life, always ſick on firſt going to ſea, after being a ſhort time on ſhore ; on ſome the effect of the ſhip's motion is ſo ſtrong, that conſtant ſickneſs is the conſequence.

The

The philoſophy of this diſeaſe has been little underſtood till lately. It has now aſſumed a ſcientific form, and is ingeniouſly explained by Dr. Darwin in Zoonomia, Section XX. on Vertigo. On the following axiom he builds the ſuperſtructure of a curious theory: "In learning to walk we "judge of the diſtances of objects which we ap-"proach by the eye; and by obſerving their "perpendicularity determine our own *." The ſubject is aptly illuſtrated by facts taken from the common occurrences of life, as ſailing in a ſhip, walking hoodwinked, ſtanding on the ſummit of a tower or precipice, riding backwards in a coach, walking in a room hung with paper marked in the form of lozenges, riding in a plain covered with ſnow, &c.

There are few people that have not taken notice of circumſtances of this kind: I have myſelf, from not being able to ſee houſes on the oppoſite ſide of the ſtreet, when looking through a window, while the ſnow fell in large flakes, become vertiginous, and been obliged to turn from the window to preſerve my perpendicularity. The dancers on the ſlack wire always fix their eye on ſome object, and if any thing is oppoſed between them and what they fix upon, they fall inſtantly.

In a large plain covered with ſnow, when it is too dark to perceive the track, it is very difficult to keep the road. This is curiouſly illuſtrated by the following ſtory, which I have heard a friend of mine narrate with great humour, on the ſpot where it happened. A party of friends being on a viſit to Mr. Daviſon of Lanton, in Northumberland, whoſe houſe ſtands on the bank of

* Vol. I. p. 227. Firſt Edition.

the

the Glen, at the foot of the hill that ſkirts Millfield plain, on the ſouth-weſt, loſt their way about a mile from his houſe, after croſſing the river, it being rather inclining to dark. They came to a farm-houſe call Yewart, quite in the oppoſite direction to where they ought to have gone, from whence they were ſerved with a guide to conduct them to Lanton. They ſet out in full confidence of getting there in a half-hour; but after traverſing a great deal of ground for an hour and a half, they returned to the very houſe they had left, not a little puzzled how they got there.—An old ſervant who had lived thirty years on the farm, laughed immoderately at the ſtupidity of their conductor, and volunteered to direct them ſafely, or forfeit any thing in caſe of failure. As Robin knew every ſtep of the ground ſo well, they flattered themſelves with the pleaſure of ſupping with their worthy acquaintance, and out they ſallied again. Robin amuſed the travellers with many adventures on Millfield plain reſembling their own; but for his part he had never loſt the way, he knew that he could go to any part of it blindfold. After travelling, as they ſuppoſed, a mile and a half, Robin aſſured them of being within three or four *tether's length* of the houſe: ſtill no houſe appeared. They grew impatient, and rather alarmed; for the plain abounds with quagmires, and is half ſurrounded with rivers having ſteep banks. At length a light was ſeen at a diſtance, when Robin congratulated the party on their ſafety: but how great was the ſurprize! when on approaching the manſion, it proved to be the houſe they had left two hours before! I need ſcarcely add, that the travellers were thus obliged to remain where they were for the night, while Robin's pride was extremely hurt by the

adventure.

adventure. On the ſame plain, when covered with ſnow, I have twice loſt my way; but fortunately reached a houſe where I obtained a guide.

But it is not on land only that we err from a ſtraight line, when the eye has no object to direct us. It is the ſame on the water in a thick fog, when there is no compaſs in the boat to ſteer by. I have frequently, even in Portſmouth harbour, returned to the ſhip I had left, after rowing about for ſome time, and when the coxſwain found his ſkill as unavailing as Robin the farmer's ſervant among the ſnow *.

It is our experience of perpendicularity with objects, that explains why ſhort-ſighted people are more liable than others to vertigo, when looking down from a height. I am unfortunately among this number, and feel the effect at a very moderate diſtance from the ground; and if I look up to people on a great height, I feel immediately pains reſembling a cramp, in the ſoles of my feet. —I refer the reader to Dr. Darwin for the explanation of this circumſtance.

When we are ſurrounded with unuſual motions, as in the librating of a ſhip, we loſe our perpendicularity, and grow giddy; the ſickneſs of ſtomach, &c. in conſequence, Dr. Darwin accounts for from what he calls reverſe ſympathy, as explained in his doctrine of aſſociated motions, which is one of the functions of the ſenſorium, according to his pathology. He therefore very properly calls ſea-ſickneſs *vomitio vertiginoſa* †.

* Boats going from the ſhips at Spithead with the intention of ſteering for Portſmouth, have often found themſelves at the Iſle of Wight, which is the oppoſite ſhore.

† Zoonomia, Vol. II. Claſs IV. 3.

This

This theory certainly beſt explains the action of what has been found moſt uſeful in the treatment of perſons labouring under that malady. It is a well-known fact, and familiar to ſea-faring people, that ſea-ſickneſs finds relief by going on deck, as they ſay, to have the full benefit of pure air. But it is certainly on the organ of viſion that the effect of change of ſcene acts, from the aſſurance of our own perpendicularity, by obſerving objects around us, ſuch as the ſhore, if in ſight of land, another ſhip in company, any of the maſts in the ſhip where we ſail; or by looking at the ſkies, the ſun, moon, or ſtars. Every thing that ſtrongly intereſts the mind, attracts uncommon attention, or rouſes the active paſſions, alſo checks ſea-ſickneſs. I have ſeen it cured by unexpected good news; by the hopes of the chace turning out a prize; by the proſpects of coming to action, or a gale of wind coming on; and, laſtly, by drinking heartily.

It is almoſt in vain to preſcribe to the condition of the ſtomach in this diſeaſe; for, as that organ is only ſecondarily affected, clearing it by a gentle emetic, or trying to fortify it by what have been called tonics, are unavailing attempts.

A perſon ſubject to ſea-ſickneſs ought, at firſt, to keep much on deck, to go below for only a ſhort time, till familiarized gradually with the motion of the ſhip. Some employment that requires ſome activity of body and mind, is the beſt way of paſſing the time. If the perſon has any turn for mechanics this might be eaſily turned into a method of cure; even aſſiſting in the labour of the ſhip might be of advantage. The faculties being always depreſſed by ſea-ſickneſs, ſtudy is the laſt occupation that ought to be ſought after.

In

In all cruizes or voyages which I have made, and as far as my inquiries go, I have never known abortion happen from ſea-ſickneſs; yet I have obſerved women of the better and lower orders of life, experience the moſt painful ſufferings from nauſea marina, in all the different ſtages of pregnancy. The child, in theſe caſes, was always born at the full time, living, and in perfect health: ſo bountiful is Nature in providing for the ſafety of the offspring *!

Having juſt mentioned above the effect of drinking heartily, in ſtaying ſea-ſickneſs, a fact ſo common at ſea, that the ſeamen always recommend *ſtiff grog*, I beg leave to illuſtrate the practice by the following anecdote.—Some time lately, when travelling between Exeter and Plymouth with Captain Kelly of the navy, a lady in the coach grew remarkably pale, uneaſy, and ſick.

* On mentioning this circumſtance to my friend Dr. Thomas Stewart of the Prince Frederick, he put the following aphoriſm of Dr. Denham into my hands: "Women ſeldom "abort while they have the vomiting which uſually attends "early pregnancy." P. 71. During the war it has been much the practice to carry a number of the moſt orderly married women to ſea with their huſbands. Many of theſe have lain in on board; a commodious apartment being always fitted up for the purpoſe; where the puerperal female has ſuch comforts as ſcarcely to be met with in any lying-in-hoſpital in England. I have known five births in the ſpace of a month in a ſingle ſhip: had the poor women been left to other charities, it is probable many of both mothers and infants muſt have periſhed. Our ſurgeons, by theſe means, have had a larger practice in midwifery, than falls to the ſhare of ſome accoucheurs on land; and have in all theſe caſes acquitted themſelves with ability and ſucceſs. It is ſurprizing to ſee the number of fine children that have been born on board. The officers, and ſhip's company, on theſe occaſions, make ſubſcriptions for the mother and infant, which always much exceed what is required; and often enables the huſband to ſend his wife home in a ſtage-coach.

She was moved into the moſt commodious ſeat, and the Captain, with the uſual frank openneſs of his profeſſion, endeavoured to cheer her up, partly with his lively ſallies, and alſo by aſſuring her that he poſſeſſed a certain cure for ſickneſs in either a ſhip or coach, which he would procure for her at the next inn. In due time we arrived at the inn, where breakfaſt was prepared, but the poor lady was unable to eat any thing. The Captain had made up his mind on his patient's caſe; he acted the part of a diſcerning phyſician, as well as the accompliſhed officer, for he knew what would ſuit her conſtitution. He called for a bumper of the beſt brandy, inflamed it ſo as to warm it ſufficiently, and, calling for a hard buiſcuit, he deſired the lady to take them together, which was done, with an inſtant alleviation of ſymptoms. The lady bore the remainder of the journey in perfect good health and ſpirits, being on a viſit to her paramour at Stonehouſe barracks, and the Captain, from the ſpeedy effect of his medicine, continued to repoſe the ſame confidence in it which he had done from long experience of its efficacy in a ſea-life *.

Auguſt 20th, 1801. Plymouth Dock.

* I have known this remedy check vomiting when every thing elſe had been tried in vain; even when ſingultus attended.

MEDICINA NAUTICA.

MALIGNANT ULCER.

IN my ſecond Volume was given the hiſtory of a particular kind of ulcer; to which, from its early ſymptoms, rapid progreſs, and difficulty of cure, I was induced to aſſign the name of *Malignant Ulcer*. The name and definition of a diſeaſe are perhaps of more importance than is generally thought. They are like a central point to which all converging rays tend: they direct future inquirers how to compare facts, and become, as it were, the baſe on which accumulating knowledge is to be heaped.

The appearance of this ulcer is new in the Channel; and from what I am able to collect, was not known in any ſhip in the home-ſeas before the preſent war. It has however become a formidable diſeaſe; and has ſo little yielded to particular modes of treatment, that we have ſtill to lament its ravages, and to confeſs that we are ignorant of its certain remedies. In the Weſt and Eaſt Indies, this, or an ulcer very nearly allied to it, was frequently obſerved in ſhips during the laſt and for-

mer wars. But Dr. Gilleſpie is the firſt who had given any accurate account of it, as he met with it in ſome of the hoſpitals in the Weſt Indies. In the ſhips of the Mediterranean it has been very common; but little attention has been directed to the inveſtigation of its cauſes; ſo that its hiſtory on that ſtation is almoſt loſt.—With reſpect to its contagious nature, as aſſerted by ſome, I do not mean to enter into any diſpute. I have not ſeen or heard any thing that can intitle it to the term infectious; and to admit this as a part of its hiſtory, is at once to ſtifle inquiry.

As the Malignant Ulcer has appeared in the Channel, it is to be conſidered rather a diſeaſe of the harbour than of long cruizes. It is chiefly liable to affect men who have returned lately from warm climates; and I have a ſuſpicion that a long and exceſſive uſe of ſpirituous liquors moſt frequently precedes its appearance. There is a misfortune attends the victualling of the navy in the Weſt and Eaſt Indies and Mediterranean, that could not be eaſily remedied; this is the allowance of grog. Some improvement has been made in procuring older rum, and perhaps alſo of a better quality; but it is the ſpirit itſelf that is hurtful; and half a pint of rum or brandy, however diluted, uſed with a diet of ſalted meat, continued for years, beſides the frequent exceſſes of the ſhore, and all theſe while the body is expoſed to a burning atmoſphere, cannot fail of making impreſſions on a conſtitution, that call forth new diſpoſitions in the character of its diſeaſes. Such a mode of life is not natural to human beings; it muſt therefore produce diſorders that depend upon the long action of inordinate ſtimuli, and bear no reſemblance to what is obſerved in the common occurrences of life.

ſuch

ſuch I conceive to be the beginning, progreſs, and iſſue of the malignant ulcer.

If there is any certainty in the cauſes which I have aſſigned, as producing ſome peculiarity of habit on which this ulcer depends, it in ſome meaſure accounts for the little effect which all topical dreſſings and applications have had in the cure.

When a diſeaſe like the one in queſtion, which has uſually appeared in a warm country only, comes to ſhew itſelf in a cold climate, it is reaſonable to conclude that there muſt be ſome ſimilarity in the cauſes which produce it, in both ſituations. The ſeaman in the Channel ſtation, when in port, and for a few weeks after going to ſea, is allowed a very wholeſome beer; but whenever it can be obtained, he ſwallows, with extraordinary greedineſs, enormous quantities of ſpirit*. The houſes to which our men reſort cannot be thought of but with horror: he is there plied with the poiſon, till he ſinks on the floor, and a few minutes is often the time taken to complete the doſe. This is not like a perſon that, though he may drink a great deal in the end, is ſlow and deliberate in gulping it down: hence the frequent deaths, in a ſtate of intoxication, which we daily meet with. If the body ſuffers a diminution in its excitement between the Weſt Indies and Ply-

* In the year 1795, Earl Howe and Sir Roger Curtis, on my repreſentation, took much pains to convince the Victualling Board of the ſalutary effects that might be expected, by allowing the ſeamen, when at ſea, beer of a greater ſtrength, with more hops, in order to preſerve it, and to aboliſh the uſe of ſpirit. No additional expence could have been incurred, for the quantity might have been diminiſhed. This propoſal, like many others, fell to the ground; it was condemned without being tried.

mouth Dock; with all deference to the *licenſing magiſtrates*, the landlord has in his poſſeſſion what can quickly ſtimulate beyond ſolar influence.

I am thus diſpoſed to think, that there are conſtitutional peculiarities to be explored for the production of this ulcer, and that the cure is to be conducted by obtaining and correcting them. Theſe perhaps depend upon circumſtances that are ſlow in their operation, and that cannot eaſily be commanded in naval ſervice; yet, nevertheleſs, the ſubject ought not to be abandoned, for it is our duty to perſevere.

In the ſummer of 1799, the malignant ulcer made its appearance on board the Temeraire, with all the characteriſtic ſymptoms and virulence which marked it in other ſhips. Every wound, abraſion of the cuticle, bliſtered part, ſcald, or burn, paſſed rapidly through the various ſtages of inflammation, gangrene, and ſphacelus; in a few days leaving the bones almoſt bare from the ſeparation of immenſe ſloughs. Mr. Burd ſucceeded Mr. Lloyd in this ſhip, and though many had been ſent on ſhore, he found a full ſick-berth, and moſt of the caſes did well in time, ſome of whom ſuffered large exfoliations of bone.

The tendency of the bone to *caries*, after inflammation in this diſeaſe, has been more frequent, than in any other ſpecies of ulcer. It has been chiefly obſerved in the tibia, but alſo in ſome of the bones of the face. Theſe bones being ſuperficial, the perioſtium is from contiguity affected by the inflammation; and with it alſo the blood-veſſels which enter the bone partake of the affection, ſlough, and leave a portion of the oſſeous ſubſtance

ſubſtance without the ſupply of blood; and thus the external lamina become carious, decay, and exfoliate. This has in many caſes rendered the cure very tedious and painful; and many have ſunk under the long confinement.

The Temeraire had been lately commiſſioned when the ulcers firſt appeared: the crew were compoſed of men that had juſt returned from foreign ſtations; and from having ſome years wages to receive, they plunged as uſual into all the exceſſes of drinking.

In our former Volume, the Terrible was mentioned among the ſhips affected with this ſore; the remains of it were but too apparent in the ſummer of 1800; nor was it completely extirpated till Mr. Mant joined that ſhip, and made new arrangements in the ſick-berth.

In the Warrior alſo, in the ſummer of 1800, it made a formidable appearance; but fortunately did not extend ſo far as might have been expected. At one of my viſits I ordered ſixteen caſes to be ſent on ſhore, who were deriving no benefit from all the methods of treatment and dreſſing that could be deviſed.

There was at one time a diſpoſition to this ſore in the ſick-berth of the Barfleur; which, by great attention on the part of Mr. Lloyd, was overcome, and the ulcers did well.

In order to render the hiſtory of this ulcer as full as poſſible, I ſhall ſubjoin the details of ſeveral ſurgeons, beginning with the Amethyſt, under the care of Mr. Edwards, whoſe reflections on the ſubject are worthy of an attentive peruſal. This ulcer commenced in the winter of 1800-1, and extended to about thirty caſes before it diſappeared.

"I am ſorry to ſay that the malignant ulcer ſo "accurately deſcribed in your very valuable pub-

" lications, raged with irreſiſtible impetuoſity.
" Two patients died; one of whom about twelve
" months ago was afflicted with a bad fever, and
" had never regained a healthy appearance; the
" other was a hard drinking old man, and about
" two years ſince was confined to his bed near four
" months with an extenſive ulcer on the ſame leg;
" he was at that time a priſoner in France, and had
" been ſubject to intermittent fever ever ſince: he
" frequently has had ſores on his leg ſince, but
" they always healed without much trouble. He
" received this laſt hurt the day before we ſailed,
" but it was ſo trifling that he did not apply for
" ſome days: when he firſt came down, it had the
" incipient characteriſtic of the ulcer: in three
" days, the ſphacelating ſtage commenced; in eight,
" the tibia was bare from the knee to the ancle.
" After which he began to do well; but in a few
" days the whole of the foot inflamed, ſphacelated;
" he languiſhed eleven days, and died.

" Two only came on in the form of a ſmall pim-
" ple; in theſe the fever was violent in its com-
" mencement: I gave an emetic to clear the ſto-
" mach, afterwards a large doſe of calomel and
" ſalts the next morning, then ſmall doſes of anti-
" monial powder and calomel, with a purge every
" ſecond day. As ſoon as the ſtomach would bear
" the bark, I gave it along with wine and nouriſh-
" ing food, the patients' debilitated ſtate requiring
" it oftener than, I am ſorry to ſay, was in my
" power to give them. Had they not been ſup-
" plied from the captain and officers' tables, moſt
" of them muſt inevitably have died.

" The topical application I made uſe of in the
" commencement was a ſolution of ſal ammoniac in
" vinegar: when they began to ſphacelate, I applied
" mild dreſſings on the ſurface, and cloths dipped

" in

" in the ſolution over the whole; theſe were re-
" newed every two hours, and the grumous diſ-
" charge waſhed off with warm water. I find the
" patients relieved by removing the gangrenous
" part when it is perfectly formed; they get rid of
" the intolerable ſtench a day or two ſooner by it.
" After it was completely cleared, the dreſſings I
" made uſe of were various, as circumſtances re-
" quired. One patient totally loſt the tendo achil-
" lis; it was nearly healed, but within theſe few
" days the ſore began to ſpread, and continues
" ſpreading at this day, but without fever attend-
" ing it.

" The firſt ſores of this kind I ever ſaw, was in
" November 1793; I was then on board the Bri-
" tannia; they appeared on board ſome other ſhips
" in the fleet prior to our having any. After va-
" rious modes had been tried, Mr. Stokoe applied
" cataplaſms of ſalt water and oat-meal, renewed
" about four times a day; it was fancied to have
" ſome good effect: during the time I remained in
" the Mediterranean, having to treat a great many
" of theſe ulcers, I applied the cataplaſm, (and
" have uſed it ſince frequently,) but without an-
" ſwering my expectation.

" During this cruize in the Amethyſt, I per-
" ſiſted in applying the nitrous vapour in ſeveral
" caſes. I think that it never induced a change in
" the diſcharge of the ulcer, nor was there a ſingle
" inſtance where the bad ſmell was not as into-
" lerable as ever in two hours after it had been ap-
" plied; but I believe that it had ſome good effect
" in counteracting the bad ſmell of the bed-clothes.
" From every information that I have been able to
" collect on this ſubject, and my own obſervation,
" theſe ſores have conſtantly broke out after the
" people have been living in harbour on freſh

" meat

" meat and vegetables, prior to which having been " long accuſtomed to a ſalt diet. This muſt pro- " duce a conſiderable change, and a diſpoſition to " ulcerate, which, as far as I know, has not been " hitherto accounted for. I do not remember that " it was looked upon in the Mediterranean as con- " tagious. From the debility conſtantly enſuing, I " was afraid to uſe general bleeding, recommended " by you, nor did I venture on cupping, although " I think it might be often uſeful, yet I have ſeen " many caſes ſpread with but very little inflamma- " tion attending them. What I have had moſtly " in view was to keep a conſtant drain from the " inteſtines, and a determination to the ſkin, to " moderate the fever; after the gangrene is form- " ed, the patient requires the moſt generous diet. " You well know how much the ſurgeons in the " navy are in want of freſh meat, port wine, and " porter, to give their ſick: I wiſh your power " was equal to your will to remedy this evil."

The ſubſequent letter continues the hiſtory of this ulcer in the Amethyſt, from which may be drawn ſome important facts in favour of the opinion which I have long entertained of its cauſes.

" SIR, " His Majeſty's Ship Amethyſt,
" Plymouth Sound, Sept. 19th, 1801.

" On the morning of the 27th of April laſt, I " left the Amethyſt at four o'clock, with a ſtatement " of the ſhip's company's health, and to procure " your approbation to ſend four men to the hoſpi- " tal. You can well imagine my diſappointment " on returning on board to find that the ſhip was

" to

" to perform quarantine for ſeveral days, which " deprived theſe poor men, (who had for months " laboured under one of the moſt afflicting of diſ- " eaſes, the malignant ulcer, although in a reco- " vering ſtate, yet were debilitated to an extreme " degree,) of the advantage of being immediately " removed to a place where they would be ſup- " plied with proper diet, wholeſome air, and the " ableſt medical advice. I am ſorry to ſay, that " they were kept on board a ſhip crowded with " priſoners, ſhipwrights, and women, for ſeven " days.

" This ſubject of quarantine is worthy of the " conſideration of the legiſlature; his Majeſty's " ſervice is often retarded by it, and even in the " preſent inſtance, every humane mind muſt feel " for the diſtreſs of theſe poor fellows. *

" Annexed is a ſtatement of health during our " cruize. In my laſt there were three venereal " patients on the liſt, one of whom I did not con- " ſider as having any venereal taint, but the con- " ſequence of a large buboe in the groin. He had " made uſe of a ſufficient quantity of mercury, and " had left it off for ſome days. After an abſence " of few hours I was ſurpriſed to find him attacked " with ſhiverings and heat alternately, headach and " vomiting, and violent pain in his groin; the ul- " cer was nearly healed, but I found the edges in- " flamed and a diſpoſition to ſlough. He took " an emetic immediately, and two hours after the " operation was over, ſeven grains of calomel, and " the next morning cathartic mixture; a warm ca- " taplaſm was applied to the ſore, which was re- " newed frequently. The ſecond day he took the

* This ſubject has not been forgot by us. *Vide* the Ocurrences. T. T.

" ſame

" ſame medicines again; the vomiting and headach
" was abated, but the ulcer ſpread rapidly, with
" a grumous offenſive diſcharge, and every ap-
" pearance of malignancy. It ſloughed very deep,
" and he was ſent to the hoſpital about the time
" the ſloughing ſtage was nearly over. Now this
" patient being attacked with this ſore at this time,
" convinces me that there was not any ſyphilitic
" taint remaining; for, whilſt he laboured under that
" diſeaſe, and made uſe of the ſpecific remedy, al-
" though the ulcer was extenſive, it healed kindly;
" and beſides, there had been in the courſe of the
" cruize ſeveral that had large venereal ulcers, yet
" not one degenerated into the ſore that was then
" ſo troubleſome in the ſhip: this is a great proof
" that, when the conſtitution is influenced by a
" ſpecific diſeaſe, it is not ſo liable, or not at all
" liable, to be attacked with this diſeaſe.

" In the commencement of the cruize, we had
" ſeveral ulcers, for the moſt part proceeding from
" hurts; but there were ſome that made their ap-
" pearance in the form of a pimple, with circum-
" ſcribed redneſs, attended with fever and conſtant
" vomiting. Some of theſe patients were ſtrong
" and healthy, others more or leſs emaciated.
" whether it was from the plan of practice I firmly
" purſued, or whether the virulence of the poiſon
" was in ſome meaſure abated, thoſe ulcers pro-
" duced from abſceſs were more manageable than
" during our laſt cruize. The men applied im-
" mediately on the firſt ſymptoms; I bled accord-
" ing to the ſtrength of the patient, and gave large
" doſes of calomel at night, and ſalts the next
" morning; this was repeated three or four days
" ſucceſſively: to the part afflicted a ſtrong ſolu-
" tion of ſal ammoniac and ſugar of lead in vinegar
" was applied: almoſt every one treated in this
" manner

" manner ulcerated, but they did not ſpread much ;
" the ſurface of the ſore was covered with mild dreſ-
" ſing, and a thick compreſs moiſtened in the ſo-
" lution kept conſtantly to the part as long as any
" inflammation remained. I am inclined to believe
" what you recommend, Sir, that ſcarifying the
" parts would be of great ſervice, yet I am afraid
" to put it in practice, for the ſlighteſt ſcratch is
" apt to degenerate into ſores extremely tedious in
" healing; and during our laſt voyage, when the
" ulcers did heal, it was not in the manner of com-
" mon ſores, but by forming ſcales.

" We loſt one good man from mortification, in
" conſequence of an extenſive ulcer on the leg ;
" he had often been bad before, but ſaid that it al-
" ways healed rapidly : he was ordered to bed di-
" rectly, mild dreſſings applied, with the ſolution
" over it, and took calomel and cathartic mixture
" three times : in fourteen days it was cicatriced,
" except one ſmall part which remained ſtationary
" for five or ſix days ; when he was attacked with
" violent ſhivering, he had two doſes of calomel,
" and the following day a purge : the appearance
" in the bottom of the ſore a dark brown, the
" edges inflamed and jagged ; its courſe was
" very rapid, for in three days nearly the whole of
" the tibia was expoſed ; it looked well for one day
" only, when the edges became flabby, and put
" on a glaſſy appearance. I immediately gave bark
" in wine in as large doſes as he could retain on
" his ſtomach : the whole glaſſy appearance ex-
" tended, and the whole ſurface became flabby,
" and the knee ſwelled to an enormous ſize. He
" languiſhed a few days, and died. I was appre-
" henſive from the attack of rigors, that it would
" end fatally, for they came on with ſuch violence.
" Perhaps if amputation had been performed imme-

" diately,

" diately, he might have ſurvived: it would have
" been difficult to have perſuaded him to undergo
" the operation, for the ſore was but ſmall (at the
" commencement of the rigors), and he thought that
" it was only an attack of the ague, to which he had
" been ſubject; beſides we were out of reach of freſh
" proviſions and vegetables, and likely to remain
" at ſea three or four months: independent of this
" conſideration, I have ſeldom ſeen amputation in
" malignant ulcers where the ſtump has not been
" ſeized with the ſame kind of ſore, even at the
" diſtance of ſix or eight months after the opera-
" tion.

" We had a greater number of ſore fingers this
" cruize than I ever remember to have ſeen before.
" They all partook more or leſs of the ſame diſ-
" eaſe: two of our beſt men loſt a finger each;
" the whole of the muſcles ſphacelated from the
" firſt joint to the metecarpal bone, where for-
" tunately the progreſs was ſtopped. On our ar-
" rival in port, we had only one object for the hoſ-
" pital; this was from a wound and contuſion of
" the ancle; it ran the common courſe of the diſ-
" eaſe, and was nearly healed when ſent on ſhore,
" but the joint is diſeaſed.

" The patients that died were abandoned de-
" bauched characters, that took every opportunity
" of drinking; and even where the greateſt vigi-
" lance and ſtricteſt attention is paid, ſailors will
" get drunk in harbour. Although four months at
" ſea, our people were in very good order: in the
" courſe of the laſt month we had ſeveral trifling
" accidents, but after we had been at ſea about two
" months, the virulence of the diſeaſe ſeemed to
" be abated, which, in ſome meaſure, proves that
" it muſt be produced by a ſudden change of diet,
" as well as from exceſs in drinking: to people

" not

" not accuſtomed to behold the galleys of king's " ſhips, it would be almoſt incredible the quantity of " meat that is daily dreſſed. I can ſee no remedy for " this, nor do I ſuppoſe that it is of any very great " conſequence, provided there was no exceſs in " drinking, for from that and bad liquor, more " than half the complaints we meet with on board " ſhips proceeds.

" I hope to ſee ſome further light thrown on " this ſubject of malignant ulcers. From your " own extenſive obſervations, Sir, and of thoſe of " your correſpondents, I expect great information. " My good friend, Mr. Stokoe (of Hexham), " whoſe remarks on this ſubject muſt be as valua- " ble as they are extenſive, will, I hope, favour us " through your medium (if he does not intend to " publiſh himſelf,) with ſome important commu- " nications.

" I am, Sir,
" With much obligation for information
" received from your works, &c.
" Your moſt obedient ſervant,
" EVAN EDWARDS."

In the San Joſef, fitted at Plymouth in January 1801, to bear the flag of Lord Nelſon, this ulcer ſoon began to make its appearance. In February Mr. Walker mentions four caſes being ſent to the hoſpital. " Four were ſent to the hoſpital with " very ill-conditioned ulcers, and thoſe remaining " on board (ſeven) have not the moſt favourable " appearance." In the ſucceeding month he remarks, " The number of ulcers has increaſed (13); " two were ſent to the hoſpital; again, others " nearly

" nearly cicatrized have broke out afresh. This " ulcer has all the appearance and symptoms of the " malignant ulcer that has of late infested the " Channel fleet. It does not seem quite so rapid " in its progress, nor are the symptoms so violent." In April the list of ulcers still increased (23). " Our ulcers increase, and begin to assume a for- " midable appearance. Every bruise, wound, or " scald, in the course of a few days put on the ap- " pearance of the malignant ulcer, and go through " its different stages, attended with little or no fe- " ver. It seems to be highly contagious; the " worst cases I have put by themselves; I cannot " trace its introduction into this ship."

From this very hasty account of Mr. Walker's, which Captain Wolseley ordered me to be furnished with, it is plain that a disposition to malignancy appeared so early as February. It is to be remembered in the history of this ulcer, that the San Josef was manned from the Audacious and Namur, both of which ships had lately returned from the Mediterranean, where they had been for four years. The men had abundance of money; and, while in port, had indulged in the excess of spirituous potation, which the newly licensed gin-shops of Plymouth Dock could so amply supply. In such constitutions I conceive this ulcer to be most frequent: the reason therefore of its appearing among a number of men is, because their habits of life are nearly alike; and similar causes must produce similar affections, as mentioned more at large in my preceding volume, when treating this subject.

A change took place, in the month of May, between the surgeons of the Neptune and San Josef; and Dr. Felix describes the situation of his sick-berth in the following manner: " You will " perceive that I have no great reason to congra-

" tulate myſelf on the exchange, at leaſt for the " preſent. I found not leſs than *forty ulcers* on " board the San Joſef, of the moſt unfavourable, " if not of the moſt malignant nature, that ever " came under my obſervation. Upon inquiry of " the mates, I found that a diſpoſition to this ſore " had prevailed for ſeveral months; that the moſt " trivial hurt on the extremities, or even the " ſmalleſt wound, became, in forty-eight hours, " an ulcer of the worſt deſcription; and that " no means could ſtop its ſpreading and ſlough- " ing for ſeveral days. Latterly a contuſion " or blow on the leg, &c. produced the ſame " appearance *; and I obſerved in one man of " the name of Henderſon, an ulcer that had de- " voured the one ſide of his face, which had fol- " lowed a blow on the ear, that was attended with " a very ſlight wound. In two men the entire " muſcles of the leg were ſphacelated, and the " diſpoſition to ſpread ſtill manifeſt; in another " man the foot was in the ſame condition; in two " or three the tibia bare and exfoliating; and in " many the ſame proceſs was to be expected."

We can hardly ſuppoſe a ſick-berth to be in a more diſtreſſed ſtate, than what Dr. Felix deſcribes. A ſhip affords ſuch few conveniences for the accommodation of ſurgical caſes, requiring the utmoſt attention to dreſſing, cleanlineſs, &c. that ſeven of the worſt were ſent to port; but Dr. Felix thought that twenty at leaſt ought to have been ſent in. In the month of June only

* Dr. Felix here ſays, a " contuſion or blow produced the " ſame appearance!" Is it not evident from this, that the diſpoſition to the diſeaſe lurked in the habit, and was only called into action by the inflammation which ſucceeded the contuſion?

eight freſh caſes were put on the liſt; and not leſs than twenty-five were cured on board, by indefatigable attention. Towards the latter ſtage he thought much benefit was derived from the arg. nitr. in ſolution; ſympathetic buboes appeared ſoon after, and the ulcer healed. Seven objects for the hoſpital were ſtill in the ſick-berth. Dr. Felix adds, that the deſcription given in Vol. II. by Dr. Browne of the Royal Sovereign, and Mr. Moffat of the Triumph, exactly correſponds with the ſore infeſting the San Joſef.—*Vide* Vol. II.

The San Joſef arrived in Cawſand-Bay on the twelfth of Auguſt. Her condition was now ſo improved, that only three caſes of ulcer appeared objects for the hoſpital, in which the cure was likely to be tedious from a carious bone. On the whole, this diſeaſe was not ſo malignant in its nature, as we have ſeen it in ſome other ſhips; but great credit was due to Dr. Felix for his exertions. Captain Wolſeley, who paid much attention to this afflicting complaint among his people, in a letter to me blames much the exceſſes from ſpirituous liquors in Hamoaze; and very juſtly complains alſo of deficient medical aſſiſtance in the ſurgeon's mates, the San Joſef not having half her complement. The crew came chiefly from the Namur and Audacious, both of which had been long in the Mediterranean.

Mr. Jarvis, ſurgeon of the Indefatigable, in a letter dated the fifth of July 1801, obſerves, that no communications from the Mediterranean reſpecting the health of the fleets employed on that ſtation have been inſerted in the two former Volumes of this work. His letter is very long, and, if detailed, would occupy a large ſpace; I have therefore thought it better to give a ſketch of his valuable obſervations.

He

He ſays, that after the celebrated battle of the Nile, ſeveral malignant ulcers made their appearance in the Culloden, of which ſhip he was then ſurgeon, that generally aroſe from very ſlight ſcratches, ſcalds, or wounds, and ſome from boils or ſmall pimples, all of which reſiſted every method of treatment that he put in practice. If the pimple or boil were ſeated on the lower extremity, it was very inert and ſlow in ſuppurating, although cataplaſms, &c. were applied; and after the dead cellular ſubſtance or core appeared through the cuticle, ſeveral days elapſed before the ſlough was ſeparated. When the ſlough was thrown off the edges in ſome became ragged, in others quite callous and horny, and when this laſt ſeparated, the ulcer was much extended in ſize. Abſorption took place from ſeveral of the ulcers, and produced conſiderable turgeſcency of the lymphatic veſſels. In ſome caſes, when the ulcer began to heal, another boil appeared in its vicinity, which ſometimes ſuppurated and formed a ſecond ulcer more malignant than the firſt; but the boil more frequently diſappeared, the original ulcer began to diſcharge again, and paſs through all its ſtages with ſymptoms of augmented virulence. Eſcharotics and ſtimulating ointments were made uſe of when the ulcers firſt appeared; but as it was ſuppoſed that they increaſed the ſuſceptibility for abſorption, dreſſings of a milder nature were afterwards uſed. He ſays, it appeared to him that the ſyſtem was ſtruggling to be freed from ſomething highly noxious and hoſtile to its healthy action, and that he at laſt left the treatment to nature.

When the ulcers attacked the knee or other parts thinly covered with cellular ſubſtance, the ſlough was generally ſo deep as to deſtroy part of a tendon or muſcle, and to injure their motion. One

patient had an ulcer ſeated between the tendons of the ham, which was at length healed, but the tendons were contracted, and the motion of the joint entirely loſt. Another had a ſimilar ulcer, which was ſo irritable and painful that he could not ſuffer it to be dreſſed; he became dyſpeptic, his ſtomach rejected every thing he took, and after lingering a month in the utmoſt agony he died. Another patient was attacked with inflammation on his ſhin, which proceeded to ſuppuration in ſpite of leeches, cathartics, &c. When the abſceſs was opened the tibia and fibula were found to be carious, and in a few days the man became weak and much emaciated. Soon afterwards a large abſceſs formed above the knee, and it is extraordinary that no previous pain was felt, nor inflammation obſerved in the part. It had been hinted to him a few days before, that it would probably be neceſſary to reſort to amputation, which he was unwilling to comply with; but when he ſaw the abſceſs he ſolicited to have the operation performed;—a circumſtance that created ſome embarraſſment in Mr. Jarvis, for the abceſs ran ſo far up the thigh, that the ſtump muſt neceſſarily be very ſhort. As his ſtrength was however declining rapidly, the operation was reſolved on and performed above the ſeat of the abceſs. The muſcles were found to be ſo flaccid as ſcarcely to reſiſt the knife. The ſtump was healing, and the patient recovering his ſtrength and ſpirits, when he was ſent to the naval hoſpital at Port Mahon, where he was ſoon cured.

The following account was ſent me by Mr. Caird of the Prince of Wales; it having been written by Mr. Alexander M'Dowal, ſurgeon's firſt mate of that ſhip.

"On

" On the 11th April 1800 we received on " board his Majeſty's ſhip Prince of Wales a " number of bad caſes of ulcer from Martinique " hoſpital, where many were labouring under " that complaint in the worſt ſtages.

" From this period, to us unfortunate, as it was " peculiarly diſtreſſing to the miſerable ſufferers, " every, even the ſlighteſt ſcratch or hurt, in what- " ever manner inflicted, degenerated into a bad " ulcer. The ſoldiers of the forty-third, who came " on board at that time, were not exempt; and ſo " alarming was its progreſs, that on our arrival in " the Downs fifty-ſix were on the liſt of ulcer: " moſtly bad caſes.

" That it was highly infectious appears pretty " clearly proved from the following circum- " ſtances;—of the fifty-ſix who were attacked, " forty-five were ſent to the Royal Hoſpital, " Deal, the others remained on board; and the " temporary ſick-bay, in which they had been " heretofore, being pulled down, they were put " into the old bay on the oppoſite ſide; which " was previouſly well waſhed, ſprinkled with " vinegar, and every mode of purification uſually " adopted was employed; but above all, clean- " lineſs was particularly attended to.—The dreſ- " ſings were frequently and ſpeedily removed. " The bandages, trowſers, &c. which had the " leaſt chance of retaining the noxious miaſma, " were either deſtroyed or well waſhed and aired. " The conſequence was, that the *few* caſes that " remained on board ſoon got well, by the ſame " treatment and regimen (water only excepted, " of which we got a freſh ſupply); and, what is " ſtill more remarkable, ſeveral of theſe were toe- " nail caſes, which we always found more obſti- " nate. And I here beg leave to remark, that

" the ceruſſ. acitat. ſprinkled over the ulcerated " toe, was very rarely found to fail of ſucceſs. " What ſtill more confirms the opinion of its " being infectious, ſeveral people who had cuts " and ſcalds, on applying, had cerate and lint " given them to dreſs them below; and *all* thoſe " healed in the uſual manner.

" The infectious ulcer aſſumed various appear- " ances in the different ſtages of the complaint; " but, in general, after a ſlight hurt, ſcratch, or " wound, an eryſepelatous kind of inflammation " ſurrounded the injured part; and, in the courſe " of a few hours, a ſmall veſicle containing a " browniſh-coloured fluid was obſerved; on this " being evacuated, a brown puncture appeared " nearly on the centre of the above-mentioned " veſicle, which diſcharged a thin acrimonious " ſerum: this morbid point ſpread rapidly; febrile " ſymptoms generally accompanied this ſtage: " frequently delirium. The edges were reverted " and painful; the ſore of a brown colour, and " covered with a deep, tough, fibrous ſlough; " the diſcharge thin and acrimonious, ſometimes " deſtroying the ſurrounding cuticle. In a few " days the depaſcent ſtage ſeemed ſtationary; and " a healthy action was juſt perceptible, by the " ſlough becoming detached from the edges of " the ſore: in two or more days the ſlough was " commonly caſt off, leaving the ſore perfectly " clean, with a fine healthy granulating appear- " ance. Things proceeded in this manner for " ſome time, in ſome inſtances till the ſore was half " or more healed up; tantalizing us with the hopes " of a ſpeedy cure, when a ſmall part of the " granulating ſurface, moſtly near the cicatrice " put on a crimſon redneſs, in the centre of which " a dark-coloured ſpeck made its appearance;

" and

" and ſpreading rapidly as before, over the whole " formerly ulcerated ſurface, and often twice as " much of the ſurrounding ſound parts became " a prey to its devouring influence.

" In the courſe of this ſtage of the diſeaſe, its " appearance was ſingularly ſtriking. The deſtroy- " ing power of the infection ſpread regularly from " one ſide of the ſore to the other, in a uniform and " well-defined line, reſembling the annexed

" Hæmorhage in the more advanced ſtages of " the diſeaſe was a very frequent and troubleſome " ſymptom; and, as far as I could obſerve, beſt " relieved by the application of cold water over a " ſimple dreſſing.

" The fœtor was peculiar and extremely offen- " ſive; to correct which the air was kept highly " charged with nitrous gas, eſpecially during the " time of dreſſing: the only effect I ever could " obſerve from the expoſure of the ulcers to this " gas, was a ſlight additional degree of pain, pro- " bably from the precipitation of its chemical " combination with atmoſpheric air. The cor- " rection of the fœtor may in part probably be at- " tributed to the ſame cauſe, operating ſtrongly on " the olfactory nerves; lavender-water and other " perfumes are ſcarcely perceptible during the " fumigation with nitrous gas. As this is merely " hypothetical, I beg leave to refer it to your " better judgment.

" In ſeveral caſes the denuded muſcles were " amazingly enlarged and diſeaſed throughout " their whole extent; reſembling an oblong blad- " der, the outer membrane being of a pale white " colour, and full of a thin whey-coloured liquid, " which iſſued out in conſiderable quantity on its " being punctured or cut into.

" In one inſtance, in which the ſore was induced, " by a drop of boiling pitch falling on the ante- " rior and lower part of the leg, but degenerated " into a foul extenſive ulcer, in the manner afore- " ſaid, in ſpite of the unremitting attention of " Mr. Chivers the ſurgeon, in aſſiduouſly admi- " niſtering the remedies uſually employed, viz. " cinchona, lime-juice, wine, and a light nutri- " tious vegetable diet; ſlight evacuations, with " emolient poultices and fomentations, in the " firſt ſtage; and ſpirituous embrocations were " employed latterly, with a full allowance of nu- " tritious regimen, and an increaſed proportion of " ſound port-wine at intervals through the day. " The ſore, by repeated depaſcent ſtages, occupied " one-third the extent of the tibia, and more than " one-half the circumference of the leg. The " tibialis anticus muſcle appeared in the middle " of the ſore, in the form already mentioned, " entirely detatched, only at the ſuperior and " inferior edges of the ſore; where it ſtretched " toward its origin above, and inſertion below. " A probe being paſſed under it, and gently " raiſed up, the entire remains of the muſcle from " its origin to its inſertion, came away without " pain, the patient feeling, according to his own " expreſſion, only a creeping ſenſation along the " bone. The muſcle appeared in a diſſolved ſtate, " and conſiſted chiefly of longitudinal fibres, " looſely connected by a vaſcular ſubſtance, full " of a whey-coloured fluid."

The

The Prince of Wales was the flag-ſhip of Sir Robert Calder, Bart. and ſailed for the Weſt Indies with ſix others, on the third of February 1801, in queſt of a French ſquadron that eſcaped from Breſt a few weeks before. After touching at the different iſlands, they returned to England about the beginning of June. It would appear that a diſpoſition to this ulcer had never been completely ſubdued in the Prince of Wales; and it was probably increaſed in this trip to the ſouthward; for a number of bad caſes were ſent to Haſlar hoſpital on the ſhip's arrival at Spithead. It had all the characteriſtic ſymptoms of the ulcer which Mr. Caird met with in the Queen Charlotte ſome years ago, which is deſcribed in our ſecond Volume. This ulcer continued, though to no great extent, during the ſummer; one amputation was neceſſary, before the patient could be ſent on ſhore; and ſome other caſes were landed at Plymouth in October.

In the preceding narrative Mr. M'Dowal ſpeaks of the infectious nature of this ulcer. This language has been employed by others, and is an eaſy way to get quit of a difficult queſtion. To theſe arguments I formerly replied. Inoculation, I have no doubt, might engraft a diſpoſition to this gangrenous ulceration in another perſon; but the ſlighteſt ſcratches are ſo often mentioned as giving the firſt notice of its preſence, that it is impoſſible to conjecture how it could be communicated to them; theſe little ailments having never brought them to the ſick-berth. But a diſpoſition of body, obtained by peculiar diet, and modes of living, explains the fact without having recourſe to any occult cauſes. I have particularly blamed the uſe of ardent ſpirits in great quantities, or when long uſed. The ſtimulus of ardent ſpirit

in certain conſtitutions, covers the face, noſe, &c. with red and irritable ſpots and eruptions. It taints the fluids, impregnates them with fœtid hydrogenous gas, which exhales from the lungs, and is known by its bad ſmell. It excites to exceſs the moving fibres, and diſpoſes them to gangrene with more rapidity than any other ordinary ſtimuli, being only ſurpaſſed by the actual cautery, certain poiſons of an animal, vegetable, and chemical nature and electricity. The ſpirit which has been ſerved in the navy this war is of the moſt fiery and inflammatory nature; the quality of it is not attended to; all that the victualling department conſiders neceſſary is, to meaſure its ſtrength that it may bear the proportion of water in making it into grog. Whether in a cold or warm climate therefore the effect of this unnatural ſtimulus will depend much on the length of time it has been uſed, and aſſiſted by other exciting powers. But it would appear from any treatment that has yet been practiſed in the naval hoſpitals, whether at home or abroad, that ſomething beyond courſes of medicines and all local applications, is wanted to produce thoſe ſalutary changes in the body which is our deſideratum. Some healing power of oppoſite principles to the exciting cauſes is to be diſcovered. This is perhaps ſlow in its operation, but I would conjecture that a total change in the modes and habits of life would be effectual.

The following communication on this ſubject comes from the able pen of Dr. Mitchell. Every thing that comes from the hands of the adventurous profeſſor is valuable, and I ſhall preſent it to my readers without further comment.

" Having been much inſtructed by your chapter
" on malignant ulcer, in the ſecond volume of your
" Medicina

" Medicina Nautica, my attention has been a " good deal directed to the ſubject ſince I read " your book.

" I have made a number of experiments in the " New York hoſpital on the qualities of pus; and " the reports of Mr. Kinge, the apothecary, and " Mr. Brower, the houſe-ſurgeon, are deciſive in " evincing the *acidity* of the liquid contained in " foul and ill-conditioned ulcers. In ſyphilitic " ſores of a bad character, the ſourneſs of the diſ- " charge was conſiderable enough to change the " purpliſh colour of *litmus paper to a red* in four " or five hours. In caſes where the matter was " good and equable, and where the healing proceſs " was going on kindly, no acidity was diſcovered " in any inſtance. This quality I take to be a " morbid condition of the effuſed humours, and " theſe do not appear to be ſour when ſecreted, " but to become ſo by expoſure to the air. Such " matter evidently has the power of decompoſing " oxygenous air, and thereby becoming acid; and " where this decompoſition goes on rapidly, it is " probable the caloric, which is diſengaged, is one " cauſe of the burning and ſmarting felt on the " ſurface and margin of the ulcer.

" Preſuming this acid ſtate of the liquid of foul " ulcers to be both the cauſe of the eroſion of the " adjacent parts and of the febrile ſymptoms which " ſo often accompany this condition of things, I " have undertaken to overcome it, and heal the " ſore, and conſequently cure the fever, by means " of *alkalis*. You may have ſeen the publiſhed " accounts of the advantages of uſing carbonate of " potaſh in *primary* venereal ulcerations. The " chancres ſoon heal; there is no ſloughing or de- " ſtruction of parts; and, what is very comforta- " ble, alkaline applications *do not occaſion buboes*,

" as

" as often happens when ſeptite of ſilver or lunar
" cauſtic is uſed, the acid of which, on its ſepara-
" tion from the metal, ſeems ſometimes to be ab-
" ſorbed, and to exert its pernicious powers upon
" the inguinal glands. The ſurgeon, in ſuch caſes,
" cures his patient of a chancre by giving him a
" bubo! I have ſince tried the efficacy of alkalis
" on *ſecondary* ulcers, and with agreeable encou-
" raging conſequences. On painting them over
" in their foul ſtate, with ley of tartar, applied by
" means of a camel's hair bruſh, once or twice a-
" day, according to circumſtances, and dreſſing
" between whiles with lime-water or ſoda ointment,
" appearances altered ſurpriſingly, and the ſores
" healed. The ſum of the evidence on this ſub-
" ject I have drawn up in the form of a letter ad-
" dreſſed to you, and now publiſhed in the 2d
" No. of Vol. IV. of the American Medical Repo-
" ſitory, New York. The piece is intended as a
" ſequel to your eſſay above referred to, and I am
" extremely anxious that you ſhould ſee it. *

" Here now acids exiſt in ulcers, and alkalis
" will cure them. Suppoſe the ulcer not ſyphi-
" litic, and the acidifying proceſs to go on rapid-
" ly and copiouſly, what will happen? Why, cer-
" tainly, in the heat of the human body of 96° or
" thereabout, a portion of it will be volatilized;
" and, evapourating from the ſore where it was
" produced, will taint or infect the ſurrounding air,
" and reaching the neighbouring patients, if there
" be any, will act injuriouſly upon their ulcers, or,
" if ſtrong and plentiful enough, will kindle up fe-
" vers in their conſtitutions at large.

* October 31ſt 1801. My bookſeller has not yet been able to procure me this ingenious eſſay of the learned author.

" This

" This vapour I conſider, in its conſtitution and " qualities, but a modification of, and nearly akin " to, the ſeptic acid exhalations, which we know " to produce moſt fatal effects, when iſſuing from " a corrupt jar or a barrel of putrefying beef, and " from heaps of decaying hides and fiſh. The " venom in theſe caſes, when acting upon human " bodies, often deſtroys their life in a few days; " while the virus thus produced in ſores kindling " up fever, and waſting away the health with dif- " ferent degrees of rapidity, according to its " ſtrength and quantity. The ſymptoms of *hectic* " are no doubt thus referable to *aërated pus*, ab- " ſorbed and working miſchief. I have even this " day remarked *ſome reddening of litmus paper* lying " in the purulent matter expectorated by a phthiſi- " cal patient. I could, if my paper would permit, " write you much more; but I muſt conclude with " aſſuring you of my cordial eſteem and regard."

The uſe of the *carbonate of potaſh*, as here recommended by Dr. Mitchell, has, by my advice, been frequently tried in very foul ulcers by Dr Stewart of the Prince Frederick convaleſcent ſhip in Plymouth harbour. The appearance of the ſores was ſoon altered for the better; and, in ſome obſtinate caſes that had reſiſted every application, it effected a cure. Whatever be the beſt manner of explaining the fact, it is certain that no waſh is better for inveterate ulcers than good ſoap and water, which muſt chiefly act from the alkali contained in the ſoap. I only wiſh that the uſe of pure ſoap and water was more frequent than they are in daily waſhing and cleaning all ill-conditioned ſores; for I am well convinced this practice would much contribute to the cure.

December

December 17th 1801. Since compiling the chapter on Malignant Ulcer, I have been favoured with the following letter on the ſame ſubject from a young ſurgeon whoſe abilities and induſtry I greatly reſpect.

To this letter I have ſubjoined ſuch remarks as its contents ſeemed to ſuggeſt. Some of Mr. M'Arthur's ideas differ from mine; in this he reſembles others of my correſpondents on this ulcer: but I hope to obviate what militates againſt my doctrine.

H. M. Ship Belleiſle in Torbay,
15th December, 1801.

" DEAR SIR,

" Until this morning I did not recollect the promiſe I made to ſend you ſome account of the " malignant ulcer that prevailed in his Majeſty's " ſhip Ganges in the year 1797, while I was her " ſurgeon. She had been employed in the Weſt " Indies ſeveral years at the beginning of the war, " and had arrived from thence at Spithead in October 1796. Between this time and my appointment to her, the 1ſt June 1797, about 200 " men had been ſent to the hoſpital, near two " thirds of theſe were ulcers. On the 4th June " we ſailed forthe North Sea to join Admiral Duncan's ſquadron, and continued off the Texel until a few days before the 11th October. I ſoon " found a ſtrong diſpoſition to ulcers on board, " the moſt triffling hurts in a few days degenerating " into extenſive ſores. A ſmall ſcratch that at the " laſt dreſſing diſcharged healthy pus, and apparently had every diſpoſition to heal, at the next " was found painful, the diſcharge dark and ſtreaked with blood, its edges livid, and the ſurrounding " integuments inflamed. From this beginning,

" a gan-

" a gangrene extended with great rapidity, oc-
" cupying, if ſituated on the legs or thighs, &c.
" in three or four days from five to ten or twelve
" inches in circumference. When the diſeaſed
" parts were thrown off, the ulcer would ſoon fill
" with healthy granulations, and would contract
" conſiderably, or was nearly cicatrized over, when
" a ſmall black ſpeck, not larger than the head of a
" pin, would appear upon its edge; from this
" point a ſecond gangrene commenced, and ex-
" tended as rapidly as the former. This was their
" moſt common beginning and progreſs, but fre-
" quently, inſtead of a ſphacelus being formed,
" the new granulations, the lips of wounds, the ſur-
" faces of burns, bliſters, &c. ſeemed to be con-
" verted into a kind of thick adheſive pus, which
" adhered firmly to the parts underneath; theſe
" did not extend ſo rapidly as the former, but the
" diſeaſed action continued much longer. In
" whichever way the ulcers extended, they were
" very painful, the diſcharge conſiderably bloody
" and offenſive; the patients were reſtleſs, com-
" plained of headach and thirſt; the ſkin was hot
" and dry, and the pulſe, for the moſt part, full.
" Theſe febrile ſymptoms diſappeared as the diſ-
" eaſed parts were thrown off. The firſt gangrene,
" except when ſituated on the fingers or toes, or
" the cicatrice of old ulcers, ſeldom deſtroyed
" more than the integuments; the next affected
" the muſcles, and, if ſituated on the tibia or bones
" thinly covered, deſtroyed the perioſteum, leav-
" ing a conſiderable portion of the bone denuded
" and carious. Every ſubſequent mortification af-
" fected the muſcles more and more; in one in-
" ſtance the gaſtroc nemii were completely de-
" ſtroyed. This ulcer firſt appeared on board in
" the Weſt Indies about the beginning of 1795,
" and,

" and, from every information I received, it did " not deviate from its original character until it " diſappeared in January 1798. It is ſomewhat " ſingular that the marines and landmen who were " ſent on board to complete her complement of " men, a conſiderable time after her arrival in " England, were as ſuſceptible to the ſame kind of " ſore as the old part of the ſhip's company, and " men in good health, and to all appearance of a " good habit of body, as thoſe who had been pre- " viouſly reduced by diſeaſes. It was alſo parti- " cularly remarked, that the men who were em- " ployed as nurſes, and almoſt every perſon who " were put into the ſick-bays were ſoon afflicted " with ulcers, and that ſome men who had ſuffered " amputations, and had been permitted to remain " in the ſick-bays where the ulcers were, did not " recover ſo well as others who had been ſeparated " and put in a ſeparate berth under the half-deck. " I did not obſerve any ſymptoms of ſcurvy among " the men afflicted with ulcers, excepting ſome- " times a waſting of the gums, which I attributed " more to a want of cleanlineſs and the uſe of to- " bacco than to a ſcorbutic diatheſis. In the treat- " ment of theſe ulcers I thought that bark and " wine given during the progreſs of the gangrene " augmented the local inflammation and conſtitu- " tional affection, but the moment the ſphacelous " began to ſeparate, and the febrile ſymptoms " ſubſide, they were very ſerviceable in ſupporting " the ſtrength under ſometimes an exceſſive diſ- " charge; nor was opium in the earlier ſtages of " ſo much uſe in alleviating pain as might have " been expected.

" Warm poultices ſeemed to accelerate the gan- " grene, but they alſo haſtened the ſeparation of " the ſlough; on the contrary, cold ſolution of the

" acetite

" acetite of lead conſtantly applied to the ſore and
" ſurrounding parts, retarded the gangrene, but
" the ſeparation of the ſphacelus was more tedious.
" The nitrous fume was applied to ulcers in every
" ſtage, but particularly to thoſe that continued in-
" dolent after the ſeparation of the mortified parts,
" or ſuch as were covered with the thick adheſive
" pus, but I did not obſerve any good effect
" from it: it was however of conſiderable uſe in
" deſtroying the bad ſmell in the ſick-berth while
" the ulcers were dreſſing. I thought the hydrarg.
" nitrat. rub. prevented, in ſome inſtances, the ul-
" cers from extending after they had put on the un-
" healthy appearance, and latterly, in conſequence
" of reading Dr. Rollo's account of the ulcer that
" prevailed at the Artillery hoſpital, the black ſpeck
" was deſtroyed with the argentum nitratum; in
" ſome caſes it was ſucceſsful, in others it had no
" effect. As the cold weather ſet in, the diſpoſi-
" tion to ulcers ſeemed ſtronger. Towards the
" latter end of December, being completely diſap-
" pointed in every hope I had of curing them on
" board, and perplexed at their daily increaſe,
" I determined upon ſending all the ulcers on ſhore
" to the hoſpital at Yarmouth, and at the ſame
" time applied to the Commiſſioners for Sick and
" Hurt for a vegetable diet for the ſhip's company.
" The Board in the moſt liberal manner directed
" Captain M'Dowall to cauſe to be purchaſed ve-
" getables not exceeding four pence a man *per*
" *diem*, but I believe they did not amount to more
" than three halfpence. Twelve dozen cabbages,
" five bags turnips, three ditto carrots, and four
" buſhels of onions, were daily put in their broth
" or diſtributed in the meſſes. The vegetable
" diet commenced, and the remaining ulcers were
" ſent on ſhore between the 25th and 31ſt of De-

" cember; and, by the middle of January, not a " veſtige of the ulcer remained on board. There " were indeed ſeveral ulcers upon the ſick- " liſt, but had not the ſmalleſt reſemblance to the " ulcers that had made ſuch ravages on board dur- " ing the laſt three years. Between the 10th Ja- " nuary 1798 and November following, only one " ulcer was ſent to the hoſpital, but the preceding " ſeven months there were no leſs than ſeventy. I " ſhall make no remark upon this fact farther than " obſerving, that, although the vegetable diet " would ſeem to have deſtroyed the diſpoſition to " ulcers, yet theſe ulcers did not at all reſemble the " ſcorbutic ulcer, but would alternately heal and " extend long after e ſcorbutic diatheſis muſt have " been removed by the uſe of lemon-juice and ve- " getables, even if ſuch a diatheſis had originally " exiſted. I alſo thought the removal of the ulcers " from the ſhip was of conſiderable utility, as the " air of a ſick-berth where there are ten or twelve " ulcers, ſome of them in a ſtate of gangrene, muſt " be vitiated. Would men breathing this conta- " minated atmoſphere acquire a ſimilar habit with " thoſe already afflicted with ulcers? And would " they not, in conſequence, be ſuſceptible to the " ſame kind of ſore? Mr. John Malone, my pre- " deceſſor, was in the Ganges, in the Weſt Indies, " and can give you much uſeful information. He " had an ulcer upon his leg on their paſſage to " England; but, whether it was of the ſame kind " with the others I have not been able to learn. " The depravity of ſome of our people is worthy " to be noticed. Although many had ſuffered am- " putation, yet this could not deter ſome from ap- " plying irritating ſubſtances to their ſores, in or- " der to become objects for the hoſpital. One " was detected with a halfpenny, another had a layer

" of

" of ſalt fiſh, and a third ſoap mixed with lime,
" on their ſores: I ſuſpected ſeveral others, but I
" believe the practice never was general. If in
" this haſty account you meet with any thing that
" may corroborate or add to any information you
" have received reſpecting this deſtructive ulcer,
" it will give me much pleaſure; but as I have
" wrote this without any kind of method, I have to
" beg you will conſider it as if it were merely a
" verbal communication. With the beſt wiſhes
" for your ſucceſs in the proſecution of your la-
" bours,

" I am, Dear Sir,
" Your moſt obedient
" And very humble ſervant,
" D. M'ARTHUR."

" *To Dr.* TROTTER,
" *Phyſician to the fleet, Plymouth.*"

The Character of this ulcer exactly correſponds with our hiſtory of the Channel ſore, Vol. II.

Mr. M'Arthur has in this narrative brought forward ſome ſtrong facts that would ſeem to countenance the contagious nature of the ſore. The marines and landmen who were embarked to fill up the complement, were as ſuſceptible of it as the old part of the ſhip's company: but it is very probable that theſe marines had lately come from foreign ſtations, and had in their conſtitutions that diſpoſition which was ſo favourable to ulceration in a wounded part. The landmen might alſo be of this deſcription. It appears plain that the diſeaſe had ſpread faſt after the people went to ſea, at which time ſpirits muſt have been ſerved, according to cuſtom; and bark and cinchona, as well as opium, in the firſt or inflammatory ſtage, he obſerves, did harm.

What is ſaid with reſpect to the nurſes and others in the ſick-berth being very liable to the ulcer, cannot confirm its infectious nature; for they, like others, who had come from the Weſt Indies or Mediterranean, muſt have poſſeſſed the diſpoſition to the ſore from antecedent cauſes.

In thoſe ſhips whoſe ſervices have been confined to the Channel, not more than ten out of the hundred, at the moſt, have been ſeized with this ulcer, including every the ſlighteſt degree of it. But in the Ganges, from Mr. M'Arthur's account, a third of the ſhip's company were ſent on ſhore as hoſpital caſes. This is invincible evidence that we muſt look to cauſes that do not act with their full force in the home ſeas, as bringing it into action.

The condition of a crouded ſick-berth with ulcers, certainly ſuggeſts precautions that ought to be ſtrictly attended to, whether the diſeaſe is contagious or not. Patients in the debilitated ſtage want pure air, to renovate and ſtimulate the powers of life, which cannot be obtained where a number of people breathe in a ſmall ſpace. But large ſphacelating ſores, like thoſe in diſcuſſion, where immenſe portions of animal matter are undergoing decompoſition, cannot fail of loading the air with unreſpirable ſubſtances, in the form of elaſtic fluids, and muſt be deleterious. The ſick are thus retarded in their cure, and the healthy gradually reduced to a condition of diſeaſe.

This able ſurgeon was moved from the Naiad into the Belleiſle in September 1801, where ſome tendency to this ſore was apparent. Mr. M'Arthur remarks, "In a number of men there is an evi-
"dent diſpoſition to ulcers: ſlight contuſions, or
"ſcratches upon the lower extremities, require
"great attention to prevent them from running
"into

" into extenſive ſores. This diſpoſition is not " however general, for there are a great many " men with boils; theſe burſt and heal without " difficulty."

Here again is another inſtance in confirmation of our general remark on the production of this ſore. The Belleiſle had been lately commiſſioned, and manned from ſhips juſt returned from foreign ſtations; but the diſpoſition to ulceration, though evident, was but ſlight, only eight caſes appearing in September.

The next occurrence of this devaſtating ulcer was in the Royal George, in the month of January 1802, in which thirty-ſix caſes appeared; ſome of theſe very ſevere. Mr. M'Donald's narrative entirely diſproves the ſuſpicion of its infectious diſpoſition; and he takes notice of the uſe of ſpirituous liquors, that have on all occaſions had the chief ſhare in forming that habit of body ſo productive of ulceration.

REMARKS.

" Since our leaving Cawſand-Bay we have been " ſeverely afflicted with ſeveral ſores of conſide- " rable magnitude; whither they originated from " contuſions, wounds, ſcalds, chilblains, or bliſ- " tered parts, &c. they very ſoon aſſumed ſymp- " toms of very great malignity; and, with " very few exceptions, they all obſerve the ſame " degenerate tendency, notwithſtanding we have " paid the greateſt attention in dreſſing, to obviate " the pending evil; the diſeaſe purſues ſuch a " magiſterial courſe, ending only in a vaſt de- " ſtruction of organized parts. It appears to be

" a diſ-

" a diſeaſe of very high excitement; but I am " doubtful whether it be contagious; although it " appears to be endemic at preſent in this ſhip: I " have diſtinctly marked ſeveral ſores in our ſick- " berth, at the ſame time, with ſome of the worſt " caſes under our conſideration, without ever " being infected by them. Alſo, a patient has " complained to me for a ſmall pimple, ariſing " from a hurt, and where it was impoſſible to " trace his expoſure to the infection of any " ſore, yet ſo rebellious would the caſe prove, " that in the courſe of a day or two, it would " rapidly paſs through the ſeveral ſtages of in- " flammation, gangrene, and ſphacelus, that all " our art has as yet deviſed, is quite inadequate to " arreſt its progreſs in the deſtruction, to a con- " ſiderable extent, of the adjacent integuments, " muſcles, membranes, and even the bones alſo, " in ſome inſtances, have not eſcaped the general " devaſtation. We cannot impute any thing of " a ſcorbutic taint in our people; they are now " living (and have been for months back) on " more than two-thirds of freſh beef, beer, and " plentifully ſupplied with vegetables. Neither " is there any thing in it of a ſcrophulous nature. " I have not the leaſt doubt but that the very " full and generous manner our people live while " in port, and the eaſy acceſs they find for *ſpiri-* " *tuous liquors* in that ſtate, have no ſmall ſhare " in rendering their habits ſuſceptible of very " great excitement in order to produce and ſup- " port, for a given period, this very peculiar " diſeaſe. With reſpect to our curative indica- " tion, we have at the commencement of the " diſeaſe entered ſtrictly upon the antiphlogiſtic " plan, by means of blood-letting, briſk purges " of neutral ſalts, plenty of thin diluting liquors,

" and

" and low diet, abſtaining from all animal food " for a certain time Our topical applications have " been various; in the firſt ſtage of this virulent " ſore, aſtringent applications were uſed cold, viz. " ſolutions of ceruſ. acet. ſal-ammon. crud, ace- " tous acid, &c. all had their turns, pledgits and " ſoft compreſſes, with ſuitable bandage, were " kept well moiſtened, and the limb held in the " horizontal poſture; and although all theſe have " been duly perſiſted in, yet in vain did we look " for theſe diſcutient virtues we had reaſon to ex- " pect from them, in order to check the virulent " inflammation, tumefaction, and ulcerative ten- " dency of this grievous malady! Bark and opium " alſo ſeemed to do harm during this ſtage of the " complaint, by increaſing the naufea and ſick- " neſs; nothing, in ſhort, appeared to conduct the " diſeaſe, in happy uniſon through its whole courſe, " better than the relaxing powers of emolient " cataplaſms, frequently renewed; fomentations " and ſcrupulous cleanlineſs, in wiping off all the " fœtid acrid diſcharge, as far as it was compa- " tible with the nature of the ſore. Thus far, I " acknowledge, Sir, my incapacity of giving " you a clear and comprehenſive idea of the " leading features of this monſtrous diſeaſe. You " have, in a very popular work, given ſuch a " ſtriking delineation of it, as it has appeared be- " fore in ſeveral ſhips of the Channel fleet, that " no one of any obſervation can miſtake the pre- " ſent ulcer.

" And it will appear to you how neceſſary it is " to ſend all the worſt caſes out of the ſhip, not " only on account of the unfortunate ſufferers, but " alſo for the comfort of thoſe who may remain " on board."

By

By a letter from Mr. Burd, ſurgeon of the Ville de Paris, who frequently viſited the Royal George, I am further informed of the practice of *drinking raw ſpirits* in that ſhip; which became of ſuch importance as to attract the attention of Admiral Cornwallis. We thus find a ſimilar train of cauſes productive of this ulcer, wherever it has appeared.

The report of the following month mentions a favourable change in the condition of the ulcers; and the further progreſs being checked, after ſending fourteen caſes on ſhore, and one death on board. The treatment was ſuch as the appearance and diſpoſition of the ſores naturally ſuggeſted; and the utmoſt attention to cleanlineſs. The number affected did not exceed forty-eight. Such was the ſcarcity of ſurgeon's mates, that this ſhip, inſtead of five, had only one; ſo that the labour fell hard on Mr. M'Donald. In this month the ulcer entirely diſappeared. The ſlovenly practice of correcting the ſmell of the ſloughing ſores by fumigation, was never tried here; ſo perfect was the employment of cleanlineſs and ventilation on the part of officers and ſurgeon, that nothing was left to that ſpecies of quackery.

MEDICINA NAUTICA.

CONCLUSION.

With this Third Volume I have now finiſhed my taſk. Fully ſenſible of the dignity of my ſubject, I truſt that I have defended the Sick-bed of the gallant naval officer and ſeaman with becoming decency, ſpirit, and independence. Sentiments ſuch as breathe in theſe pages may not be palatable to every one; but it is no unworthy confidence to flatter myſelf with, that they have ſome chance of being uſeful to poſterity when the ſloth and indifference which it has been my province to aſſail can only be remembered by the activity which they called forth. Few perſons can meaſure the degree of fatigue, in body and mind, and the expence which attend purſuits of this kind amidſt the buſtle of naval ſervice. My official poſtage has often exceeded *ſeven ſhillings per diem*, and a new medical publication frequently taken my *laſt guinea!*

There is ſcarcely a point of duty connected with health that has not undergone more or leſs diſcuſſion in theſe volumes. We have ſeen a whole fleet cleared of Infection withoutre ating the ſmalleſt

alarm, and we have witneſſed the correction of a general SCURVY without a ſingle ſhip remaining inactive. But above all, it is hoped, that new modes of *feeling and thinking* have, during theſe meaſures, been engrafted on nautical arrangements. The Britiſh ſeaman, hitherto neglected under diſeaſe, has been raiſed to his ſtation in the ſcale of maritime tactics, and the ſtudies of MEDICINE have newly ſtrung the ſinews of WAR. The chapters on contagion and ſcurvy, as well as others, afford ample examples of this; and in proportion to the full employment of our precepts, has ſucceſs been eſtimated. A legiſlative bounty has been lately awarded to a doctrine which I have uniformly oppoſed. The author of the *Nitrous Fumigation* may now act the part of Horace's miſer, "*populus me ſibilat*," &c. He may perhaps ſneer at the *phillipics* which are poured forth againſt his vapours in our volumes, and hugg the *five thouſand pounds!* But it is my duty, as a phyſician in a public department, to contraſt this gift of Parliament, and the encomiums which have been pronounced by Meſſrs. Wilberforce and Erſkine on what I conceive to be *demonſtrated quakery*, with a narrative that ought to draw tears of pity from every brave man that ever received relief or comfort from the hands of a medical friend on the bed of affliction. This bounty, I ſay, has been conferred at a time when not leſs than 200 ſurgeons, and 300 ſurgeons' mates were diſcharged from the navy of the country without a ſhilling of *half-pay*, or any thing that can be conſidered as a *retaining fee!* And, after ſervices the moſt ſplendid and honourable, in which the medical character was ever engaged,

> ——Turn thy complexion there!
> Patience, thou young and roſe-lip'd cherubim;
> Ay, there, look grim as hell!

But this is not all: ſuch of theſe gentlemen as are fortunate enough in fixing on ſhore, will not quit their retirement when another war commences, and thus an immenſe loſs of experience in naval practice will be ſuſtained; and the brave man muſt be again committed to the treatment of ſome raw and untutored adventurer in phyſic.

Surely ſuch a cauſe as this would better become a Britiſh Senator than the empirical trumpery of any *fumigating* proceſs. For on the temporal encouragement beſtowed on the medical profeſſion, muſt in a great meaſure depend the manly and active exertions of the duties which belong to it.—*Sic deus faxit!*

N. B. COMMUNICATIONS for the future editions of this work may be addreſſed, *poſt paid*, to the author.

FINIS.

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